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The bee cellar of Robert Hamilton of Aylsham, Saskatchewan

Bob Hamilton's Bee Cellar

By Percy H. Wright

Offhand, one might think that wintering bees in the far north of Saskatchewan would present difficulties not encountered farther south. Actually, we appear to get on better in meeting wintering problems than almost anywhere else.

Outside wintering is satisfactory, too, but the general opinion among beekeepers is that cellar wintering offers the greatest opportunity. The chance of cleansing flights during the period of confinement is not enough to be much of a factor, in most winters at least. As a matter of fact, the bees seem not to suffer for its lack, though commonly they have no flight from mid - October to mid-April, six months straight.

A real consideration may be the quality of our winter stores consisting as they do almost entirely of pure sweet clover and fireweed honey.

Locally there is no appreciable flow from plants that furnish honey unsuitable for wintering, or at least the bees do not take advantage of it in the presence of an abundance of sweet clover. Sometimes small amounts of dandelion honey may be left in the corners of the brood - chamber combs, hard granulated, but few of us have thought it necessary to take account of it in hefting the hives before putting them away for the winter. No one in our district ever bothers to extract honey and feed sugar.

Mr. Robert Hamilton, of Aylsham, Sask. (brother of the Scottish Hamilton who wrote the article on parthenogenesis for Gleanings last spring), has built a bee cellar which is probably the finest in the province. He had his bees, some 400 colonies, in the house cellar the first winter after moving north, and the difficulty of keeping them cool as spring ap-

OAC Library

One of Robert Hamilton's apiaries in Saskatchewan

proached gave him a good idea of the fundamental problem of wintering in bee cellars. In the effort to lower the temperature in the cellar he once hired a snowplane, and used the propeller to blow a blast through the cellar window.

The new bee cellar is 22 feet wide and 50 feet long, built entirely of rough lumber except the ceiling, which is shiplap. The roof and the ceiling are braced together, so that each strengthens the other, and in the whole space there is not a single support to the floor, a feature which undoubtedly makes for ease in carrying the hives in and out. The excavation is only five feet deep, and thus the labor involved in carrying the hives up the long sloping entranceway is reduced. Over the ceiling there are three feet of planer shavings for insulation. The cellar accommodates 390 hives without crowding.

It is the provision for ventilation which is the striking feature of the construction. There are three outlets at the ridge of the roof, the center one 24" x 24", inside measurement, and those at the two ends 14" x 14". The inlet ventilators go down under the ground outside the wall, and enter at the level of the floor. There are four of these, two on each side, and they measure 16" x 16". In cold weather, 90% of the ventilator space is closed. It is there merely to insure that the bees will not become too hot in March and April. When there is not much difference in temperature between inside and outside, the flow of air through small apertures may be too slow, and the provision of an over-abundance of ventilator space seemed the best plan to increase the rate of flow. If electric fans had been installed at the exits, to give a forced draft at time of need, not nearly so much ventilator space would have been needed.

Bees are also still wintered in the house cellar, and Mr. Hamilton gives some interesting comparisons between their behavior in the two cellars. The temperature of the house cellar ranges between 40° and 45°. The temperature of the bee cellar averages about 35°, but it goes lower in severe weather, down to frost, or even as much as ten degrees colder. And yet the hives in the house cellar come out noticeably lighter in stores in the spring, though weighing equally when they all go in. The only possible conclusion is that the stores consumed in the generation of heat when the bees are on the cool side is as nothing in comparison with those consumed in restless activity when they are too warm.

Mr. Hamilton tells how once, many years ago, he had bees in the cellar of a very old house, a house on such a poor foundation that the cellar air temperature hovered around 15 all winter, and could not be raised by oil stoves. The bees in this cellar came through with a 2% loss as compared with a 10% loss for

those placed in the regular bee cellar.

These and other experiences have convinced Mr. Hamilton that the 42°-temperature usually recommended for cellar wintering is considerably too high, at least in our dry climate. Everyone will remember instances when his underwear becomes damp with sweat from over - exertion in cold weather, and how it lost insulation value: in fact, it sometimes makes quite an impression on one's mind if the wind is blowing. Bureau of Standard's statistics show that an ordinary brick wall, if air-moist, conducts one-fourth more heat units than if it is perfectly dry. The ability of dampness to destroy insulation is a very well - known fact, so well known that it is hard to realize how the practice ever arose of letting the excess moisture of outdoor packed hives escape upward into the packing. The bee cluster must feel the effect of the same principle. After all is said, everyone will agree that the bee cluster ultimately depends for insulation chiefly upon the outer larvae of bees of the cluster itself, and the finely divided air that they hold. Naturally, if the bees themselves are damp or wet, much of the insulation value of their bodies will be lost. Thus it seems only to be expected that bees in our dry western cellars would be comfortable at five degrees cooler than the usual 42°, or perhaps even ten degrees cooler.

To us, looking southward from our far north and west, it would seem that 42° is high for any area, although all will admit that we have no business making decisions for conditions other than ours. At any rate, the secret of successful wintering can be stated so as to cover all conditions. The secret is the maintenance, in an atmosphere never too humid, of a uniform temperature high enough that very little heat-generating activity will be required, and yet low enough that mere restless activity will be discouraged. If this sufficiently low temperature is to be found and maintained, it is evident that there must be some provision for sudden cooling when needed.

Even here, though, where most conditions favor cellar wintering, we recognize that cellar wintering has one serious disadvantage, the lack of protection for the colony during the cool or cold spells of early spring and late fall, both being periods when we want the maximum of successful brood-rearing. Not many beekeepers will be willing to go to the trouble of giving insulation for these periods, when they are very much aware that a cellar giving well-nigh perfect winter conditions is available for the severest cold. And yet, if the bees had been packed for winter instead of put into a cellar, they would undoubtedly be furnished protection in spring and fall without extra labor. Perhaps some form of inexpensive if only partially effective protection could yet be devised for these periods.

Moose Range, Sask.

BEE SWARM IN A BOMBER

Working round a Halifax at its dispersal point, the ground crew heard a strange buzzing noise. One of the aircraft hands went to investigate and found a procession of bees entering and leaving a small hole in the tail of the plane.

The Halifax had to be ready for the night's operations, but nobody on the station knew how to handle a swarm. It was a problem rather beyond King's Regulations, but at last the station padre remembered a vicar in a local village was a beekeeper and asked him to come over and help.

First of all the fabric had to be stripped from the tail of the plane. Then the vicar, wearing gloves, found the queen bee, surrounded by her drones and workers Bees were continually flying in from the hedgerows. But as soon as the vicar had removed the queen the other bees followed her in search of a new home.

The fabric was then patched up and a few hours later the Halifax took off for Cologne and returned safely. The pilot remembered that there is a belief among country people that where bees swarm they bring luck.

Bees once swarmed in one of the wings of a Whitley in Coastal Command. The aircraft carried out several operations before the swarm was discovered, and seven pounds of honey were extracted and shared out among the crew.—Air Ministry News Service with compliments of Joint Liaison Committee, British Embassy Annex, Washington, D. C.

Working for Wax

By B. Alfonso

[This article was received April 13, 1943. —Editor.]

It has been said that running an apiary for wax only does not pay, but sometimes circumstances arise when the price of honey has gone so low, it would have to be taken off the hives at a loss, and barrels are not only very scarce, but almost worth their weight in gold. Such was the Cuban beekeeper's predicament some three years ago. If the apiary was to be kept up, and running expenses paid, something had to be done about it, and there was really no other choice but to make up one's mind to work for wax. This once decided, the next thing was to find a practical plan. No bee book or magazine seemed to offer much help, and it was only after weeks of disappointing experiences, and failures of things attempted, that a workable system evolved.

The start to work the apiary for wax only was made at the beginning of April with 225 hives, just when the sarza was beginning to bloom. Frames that had been wired in readiness for sheets of foundation were to be used, but in view of the new plan, only a two-inch starter was put in with the idea that if the bees should build out all worker cells on these wired frames, the combs would serve for the brood chamber, and all the old, black, and undesirable ones would be released for rendering into wax. The brood chamber on the bottom board was to be kept full of brood and perfect combs all the time, while the hive body above was filled up with empty frames, and one comb of uncovered brood placed in the center to act as a bait. The hives were left in this condition for eight days.

With two buckets, a sharp knife, and a good going smoker, the first hive was opened to begin the great adventure. One look, and all illusions of having all worker cell combs drawn with starters fled. All the frames were drawn out to the bottom bar, but only as far as the starters went were they worker cells. The nearest to perfection were the ones on either side of the center comb of brood. There was a perfect riot of burrs built out in all directions, but not a single comb in fit condition to be used in the brood chamber. The work of getting the wax off the wires was so tiresome, and took so long, it was plainly demonstrated that the use of wired frames was not practicable.

At the next revision, nine days later, unwired frames with starters were substituted for the wired ones, and the work was much easier. With practice, a quick glance sufficed to find a new comb good enough to be kept, and an old one to be removed. Every speck of wax was thrown into the cans, and the hive covers replaced in a very short time.

As the season was a very good one, the bees were all the time getting ahead of the operator, and putting honey in the newly drawn combs. A third hive body of frames would be added, but in spite of this, the result was a mushy, sticky mess. To take care of the wax cut from the combs, the cans were dumped on a sort of big sheet made by sewing some sacks together, laid out on the grass some distance from the apiary and left there for the bees to clean up.

When things got very rushed, and there was no time to replace starters, the wax was sliced from the frames in such a way as to leave two or three rows of cells attached to the top bar; but as time went on, this plan had to be discarded. The bees would dress up these rows of cells a little, and then simply abandon them. Finally, there got to be so many of those neglected frames that they were all cut out, the frames well scraped, and returned to the hives empty. Then it was clearly demonstrated by the bees themselves, that they preferred empty frames. In hive bodies where there were frames with starters and empty frames, the latter were always worked on first. There were three types of frames in the apiary: the triangular, the Miller type with a little stick to lock the foundation, and just a plain strip of material. Invariably, it was on the plain frame that the bees clustered first to begin their building. With no starters to put in, the work was being simplified all the time.

To clean out the honey from the good combs which were to be used in the brood chamber, they were hung in a tank made by folding up a sheet of zinc at the ends, and just

the width of a frame. This tank stood on two legs some distance from the apiary so that the bees could clean the combs out. Late every evening they were placed in hive bodies, handy for the work next day, and at the same time the day's gathering of wax from the cans, now perfectly dry, was dumped into the boiling tank. The first month's yield was 160 pounds, when rendered down.

All was not yet plain sailing, however. There came a day when some combs had broken down from their weight of honey, and dropped to the bottom of the tank. The result was disastrous. A sticky mess of dead and dying bees had to be dumped out on the grass. To prevent such a thing happening again, the bottom of the tank was punched full of holes, the honey dripping on boards below, where the bees reached it easily and cleaned it up.

Queen-rearing was begun as usual, in July, in queen - right hives above excluders, with holes bored at the back of the third hive body. The 112 hives that were celled at one time were skipped revision one week, so as not to disturb the virgin queens, but when the hives were opened, it was found there were no queens to be disturbed. At least, only four had returned and were laying quietly. Wax gathering and the avidity for the perfect comb had been carried a little too far. There was scarcely a drone to be seen in all the apiary.

To get a supply of drones as soon as possible, two combs, the ones next to the wall but one at either side, were raised above from the brood chamber, and empty frames substituted. Almost immediately they were drawn out to the bottom bar, a complete comb of drone cells. As they were filled up with eggs from the best queens, they were distributed around among the other hives to be taken care of, and by the beginning of September, the lack of drones seemed to have been overcome. Afterwards, care was taken to leave plenty of drone cells, but only in the best hives.

All summer long, the work of wax gathering went on. Observing how quickly drone comb was drawn out in the brood chamber, it was decided to put two empty frames into all the brood chambers, always in the same position, so that there would be no confusion. The result amply repaid the little extra work. Always there were two full drawn combs, and the total of the wax amounted usually to between 160 to 180 pounds a month with the exception of the month of September, when the total was 209 pounds.

In October it became apparent that many of the hives were swarming out, but in a peculiar way. In a perfectly balanced hive the bees would suddenly rush out, usually just after being dewaxed, and with a spiral movement, fly right up into the sky and disappear. No reason could be found for this strange behavior, as there were no cells, no lack of pollen, and plenty of honey.

After losing 23 hives in this way, it was considered prudent to put the apiary back to normal conditions, with wired frames and plenty of good foundation, concluding that the bees had reached that point which is just a little beyond endurance.

From a monetary point of view, working for wax definitely does not pay, but there is no limit to the knowledge gained in the adventure.

Mayajigua, Cuba.

[After receiving the above article we wrote B. Alfonso regarding the total amount of wax secured during the entire season. The reply was that during seven months, April to October, the amount was 1249 pounds from 225 colonies which would be an average of 5½ pounds of wax per colony. The letter contains further interesting information:—Editor.]

No exact record was ever kept of the wax produced in my apiary until I began to work for wax only, and it must be understood that this experiment was not undertaken with the idea of studying results, but out of a desire to keep the apiary debt free when no barrels could be bought, and no sale for honey, except at a very low price, to be exact, at 12 cents a gallon. There was, however, a demand for wax, and much competitive buying, prices ranging, as the months went by, from 29 cents to 41 cents.

In this district, which is on the north coast of Cuba, and definitely swampy, there is not what you call "a season". The bees work all the year round, and one can graft queens at Christmas time as well as in July or August. We have, however, what we call our five main honey flows. Counting from December, the month of the biggest honey flow, we have the aguinalda with azulita, Bajucas Colorado and Indio, Sarsa, Tosino, Leñatero, and there are always the Royal Palms, thousands of them everywhere.

As I wrote in the article, when the bees

(Continued on page 632)

A Beginner Repeats

By Leonard O. Dansby

During the spring of 1941, I was operated on for appendicitis. When the doctor felt that I could navigate under my own power, he suggested I spent a part of each day "sunning".

I sat out in the front yard for three days, read a sizeable stack of dime novels, wrote letters to people who had given me up as missing or lazy—and then I got that first "push" that turns a man to keeping bees.

There was a Queen's Crown vine growing on a trellis near my chair. The small reddish blossoms became festooned with bees. I watched them for three days. All my natural and school-prescribed training said that these tiny creatures were dangerous. To me the most dangerous was the one huge black bumblebee that droned through the vine.

Finally, curiosity overcame me. I went into the house and returned with a Mason jar, the lid punched full of holes. (Before the idea occurs, I might as well state that I did not have ambitions to capture a full hive of bees with the jar—but merely to observe them). I succeeded in trapping half a dozen or so highly agitated Italians and gaped through the bottle at them in a way that must have impressed them all the further of the peculiarities of the human being.

My experiments came to an abrupt end when the bloom on the Queen's Crown died abruptly and my guests departed for more fertile fields. Soon after this I was fully recovered and for the space of about four months I thought no more of the creatures.

A chance trip to the public library brought a bee journal to my uneducated eye. I sat down and read the entire issue. When I had finished I had a pocketful of names of bee supply manufacturers who offered free catalogs of their wares. Within two weeks I secured several of these catalogs. I firmly believe that these catalogs furnish a complete bee textbook in themselves.

My next step was the purchase of a small volume "Beekeeping for Beginners" by Mrs. Comstock. This book was lodged in a small niche in the stacks of used books in the store. The owner, seeing my interest, said that he thought he had another book on bees around somewhere. I was passing the store two days later when he came out and said that he had a copy of "ABC of Bee Culture".

I read and re-read these books for fully two months before I attempted to purchase any bees. Mrs. Comstock's work and the "ABC" were constant companions on my desk, living room table, and in the evening before I went to sleep.

Like most beginners, I had now reached the moment when I felt that the world's revolutions would cease immediately if I did not possess a colony or two.

My first two colonies were purchased when experts advised that they not be. I knew that they would have only time enough to gather some stores for the winter—if that.

I set the hives on top of my garage and immediately they became the ninth - through - sixteenth wonder of the world. Neighbors peered cautiously and one or two showed a genuine interest and revealed that they had formerly kept bees.

When I was beginning to feel that my foundation would pass into grease spots and my hives would fall heir to a family of termites, my bees arrived. (Actually, they arrived within an week after I placed my order!)

With careful regard to the instructions on the package, I let them stand in a cool place and fed them sugar syrup. When they ceased their angry warlike buzzing and adopted the smooth singing note of contentment, I felt that I had experienced one of the real moments in a lifetime. To a person not interested in bee's—amateurly or professionally—I suppose that the above sentiment sounds a trifle melodramatic. I am sure that there are others to whom their first acquaintance with bees in this manner produced the same sensation.

That evening I took the cages out to the hives. The neighborhood sat on it's respective back-step and watched me perform. To say that I felt conspicuous is mild indeed.

Taking six of the frames from each hive, I installed the bees. When I jounced the cages on the ground and then reached in for the feeder can, I had the same feeling a man gets when he comes face to face with a ferocious bulldog and is armed with a slightly used toothpick.

During my time of keeping bees this has been the only time that I experienced a tinge of fear of the stinging power of my newly acquired "pets".

Perhaps, since I have arrived to this point without revealing it, I should say that I live in a part of the city that is fairly novel for a town its size. My residence is in a section that has numerous vacant patches—these patches consisting of six or seven lots in a row. Near is a huge city park possessing large quantities of plant life. I am a city beekeeper.

The next week nearly drove me crazy. My urge to open the hives and see the condition of the queen finally overcame me. On the fifth day I opened the hive. The queens had been released and the work of building the foundation into comb was well underway. At this point I demanded the spectators (I never examine a hive without a full house and gallery) observe the marvel of the comb. I passed one frame down to the group and they were genuinely impressed.

My colonies managed to get enough of the mesquite honey flow to build up stores to last them through the winter. All winter long I would stand at the back window and wonder if they would ever "produce".

My first spring of beekeeping kept me puzzled, elated, and despaired in turn. One thing I would like to say, and that is, even with the knowledge of a dozen books in one's head, the first spring of actual practical beekeeping seems a completely unrelated thing.

My hives wintered nicely—considering that they were started at an awkward time. There was a nice crop of bees, the queens were laying, and there were still enough stores left to tide them over until the first honey flow started.

About this time I decided to try a hand at strengthening a colony by package bees. I took the package, laid a sheet of newspaper over the top of the bottom body, placed a small block of wood on top of the frames to rest the cage on, sprinkled the paper thoroughly with sugar syrup and opened her up (and crossed my fingers!)

The experiment succeeded. I had a one-story hive and a strong two-story.

The rest of the story can be told by saying that I secured a fair-to-middlin' crop of honey from the one-story and a good sized crop from the two-story.

I sat down about as proud as I could be when I offered the guests of the night a piece of genuine chunk honey. I don't think I ever tasted honey any better than that produced in my "experimental apiary".

San Antonio, Texas.

350 full-sized colonies received at Harlan, Iowa, by the Old Taylor Honey Co. This 10-ton truck has traveled over 200,000 miles hauling nothing but bees and honey.

Scientific Breeding of Bees

By W. J. Nolan

Formerly Assistant Apiculturist at Beltsville, Md.

[This article is taken from the 1940 edition of the ABC and XYZ of Bee Culture.—Editor.]

It is unfortunate that Mendel's detailed records have never been brought to light. His studies were not confined to one race of the honeybee, since it is reported that he worked on the heather or Dutch bee, the Italian, the Carniolon, the Egyptian, and the Cyprian, in addition to the native bee of his region.

Since so much of the work has concerned the development of a technique for breeding the honeybee under controlled conditions, and a biometric study to determine measurable physical characters of individual members of a colony as well as characteristic colony behavior marking races or strains, strictly genetic results are scanty as yet, and often of a somewhat general nature.

The work of the U. S. Department of Agriculture has verified the fact that honeybees can be successfully carried from generation to generation by means of artificial insemination, seven successive generations having been obtained in three seasons' work. Allowing the queen 16 days to develop from egg to adult, 7 days in which to mate, and 3 more in which to begin egg laying, there should theoretically be a laying queen of each successive generation every 26 days, but the normal hazards and delays of beekeeping have greatly increased this period in actual practice.

The Department has verified Watson's feat of transferring sperm from the spermatheca of one queen to that of another. The queen from which sperm was transferred had been dead for several hours. This procedure makes possible a type of line breeding, involving crosses of a drone with his offsprings, although on an extremely limited scale, because the supply of sperm from the original drone cannot be replenished but will be diminished when transferred from queen to queen.

The work of the Department also indicates the color and tongue length can be inherited independently of each other and that each race has its own size characteristics, which are inheritable and more or less constant within fairly definite limits. Judging from preliminary data, some correlation exists between tongue length and number of wing hooks, and also between tongue length and length of scapus. Gotze's statement of the correlation between tongue length and length of labial palpi also seems borne out by the work thus far.

A hitherto undescribed mutation, involving a yellow coloration on the face of the bee—principally on the clypeus, genae, labrum, and, at times, bases of antennae was found in an Italian strain in the Department's apiary formerly at Somerset, Md., and an attempt is being made to obtain a homozygous strain. However, it appears to be a recessive character.

The development of stock especially resistant to European foulbrood was announced as the result of selective breeding experiments in New Jersey. In describing the first season's work of Iowa Agricultural Experiment Station to find stock resistant to American foulbrood, Park concluded that variation in resistance to American foulbrood exists. Some evidence of the inheritance of number of egg tubules has been reported in a private communication from J. E. Eckert, describing work at the University of California.

Since the World War an independent breeder, Henry Brown of New Jersey, has developed a light-colored strain, reputed to be very gentle, by crossing the Cyprian and Italian races, according to a private communication.

Even years before Brown's work the "golden" Italian bee, a strain with the anterior portion of each of the first five abdominal tergites marked with a golden band, instead of only each of the first three as in the ordinary Italian, was developed in this country, supposedly by crossing the Italian with the Cyprian. This golden Italian, while held to be gentle and a beautiful bee, had little repute as a honey gatherer. Sladen developed a "British golden" by crossing the English strain of the com-

mon black bee, the Italian, and the "American golden." By continued selective breeding in an isolated locality, a bee was obtained which Sladen claimed combined the hardiness and industriousness of the black with the prolificness of the Italian, although its area of golden coloration was not so extensive as that of the "American golden." No attempt was made to increase the area of golden coloration, however, since this character was used merely to provide breeding stock with drones of such a color that their progeny could easily be distinguished from that of the common black drone, which prevailed elsewhere in the locality.

Jay A. Smith reports in a private communication that in crosses obtained by the Watson method no correlation seemed to exist between color and gentleness.

The reports of the work in Switzerland are of especial interest to beekeepers, since rather extensive records are kept showing the returns from improved (veredelte) stock, meaning that developed at the mating stations, as compared with those from ordinary or unimproved stock. Thus from 1915 to 1928, according to a survey of certain apiaries which contained colonies of both types of stock, the honey crop of the improved stock, averaged larger per colony each year than that of the unimproved stock, ranging from 20 percent more in 1923 to 100 percent more in 1924.

Mikhailoff used the Watson method of insemination to demonstrate that the spermatozoa from white-eyed drones are active, and he succeeded in obtaining white-eyed workers and queens. White-eyed drones apparently do not see and do not mate in nature. That the gene for white eyes is recessive to the normal eye color is shown by the fact that with natural mating a queen laying eggs from which white-eyed drones arise gives only workers with normal eye color.

In the Department apiary formerly at Somerset, Md., half of the drones from an Italian queen that produced white-eyed drones were white-eyed and half were black-eyed, a proportion also observed by other investigators. A few of the white-eyed drones were seen to fly off into the air, but none was seen to reenter the hive. Some, on leaving the hives, made short hops or flew in small circles away from the hive entrance. In the fall only black-eyed drones were found in the hive with this queen. Whether at this season the workers removed the white-eyed drones before emergence is problematical, since no white-eyed drone pupae were found in any of the sealed cells. A number of virgins were reared from this queen, but attempts to inseminate them with sperm from the white-eyed drones were unsuccessful. One of these virgins inseminated with sperm from a normal drone, however, produced some white-eyed drones. Part of the worker progeny of the original queen were a lighter yellow on their abdomens than the ordinary Italian bee.

As for the inheritance of quantitative characters, Mikhailoff reported that a Caucasian queen from a colony with a tongue length of 6.9393 mm was mated with a central Russian black bee with a tongue length of 6.1729 mm, and the resulting cross gave a bee with a tongue length of 6.705 mm. Twelve percent of these hybrids had tongue lengths of 7.0282 mm, this being greater than that of either parent race. Two Caucasian queens that were inbred with "brother" drones had progeny with shorter tongues than those of their worker sisters. Other quantitative data are included and, although they represent a very scanty number of colonies, they are of interest because they are the first statistical data to be published that are derived from controlled crossing of the honeybee.

Alpatov has concluded as a result of his studies in the Union of Soviet Socialist Republics that, in the area covered, absolute size of the body and of wings, relative size of the wax gland, and the color of the abdomen seem linked. The same is true concerning length of tongue and length of hind legs. He has pointed out that the constancy of color of the yellow and the black races in the United States shows that color is an inherited racial characteristic.

Watson has stated that the albino bee is dominant over the common black bee.

Newell (See Dzierzon Theory) crossed yellow Italians and black Carniolans and found yellow dominant. Watson crossed a black virgin and a yellow drone and obtained all

black offsprings. It may be assumed that Watson used the common black or Dutch bee. Sladen, in crossing a golden queen with pure black drones, obtained "intermediate" workers that had black bands on the posterior margins of the second to fifth abdominal tergites, increasing in width from tergite to tergite toward the rear. The sixth tergite was black. As a matter of fact, the last abdominal tergite is black in all varieties of the European honeybee, no mutation showing a different color having yet been reported.

In the work at the Department a daughter of a European brown bee crossed with a yellow drone produced workers that might have been taken casually as a dark strain of three-banded Italians, possibly because of the blackness of the posterior bands of each of the first three abdominal tergites. Practically the same results were obtained later with Caucasians and Italians.

Mikhailoff, in crossing queens of the central-Russian black bee with golden Italian drones, found yellow to be the dominant color in 90 percent of the progeny.

Gotze holds that the yellow scutellum, such as occurs in the Cyprian and other eastern races, is the expression of a dominant unit factor. He found that a golden queen mated to a black drone gave workers with yellow scutella. These workers, however, as regards abdominal coloration, were not golden, but had abdominal segments with decided black edges, as in the work by Sladen and the writer. Gotze assumes that a separate gene is responsible for the black edges on the abdominal segments.

Stucki has suggested the possibility that certain definite excesses or deficiencies from the normal wing venation may be characteristic of certain strains of Swiss bees, although he postpones definite conclusions until more material is accumulated. Like Casteel and Phillips and others, he found drones especially variable. Rytir reports, as a result of crossing the Iskra strain of bees from Czechoslovakia with the Nigra strain of the European brown bee—the latter strain having a lower cubital index—that the lower index is completely dominant over the higher.

Dr. E. F. Phillips "at bat"; Dr. E. J. Dyce "on deck". These excellent portraits of New York state's illustrious leaders in beekeeping were made by Wm. L. Coggshall.

The Sweet Clover Weevil[1]

By J. A. Munro, Entomologist, and H. S. Telford, Assistant Entomologist, North Dakota Agricultural Experiment Station.[2]

To what extent the sweet clover weevil may affect the growing of sweet clover can be judged by the damage it has already caused in areas where it has been under observation for the past 3 years. It was first recorded as destructive to sweet clover in Manitoba in 1939 and has since become of rather widespread occurrence in this Canadian province and more recently in the adjoining area of North Dakota and Minnesota.

First reported in North Dakota from Pembina County in 1941 the pest has since been observed at scattered points throughout the northern half of the State. It is being regarded with growing concern because of its rapid spread into new territory and its persistence in territory where it has become established.

In response to a recent inquiry regarding the sweet clover weevil situation in areas adjoining North Dakota, A. V. Mitchener, entomologist, University of Manitoba, writes:

"In our experience the damage is done largely to young sweet clover plants when they are struggling to become established in the ground. Although the adults appear on the two-years' growth, the damage there, although noticeable, is not important. We believe that in many fields poor stands of seedling sweet clover plants are the result of the adult weevil eating the leaves shortly after the plants come above the ground."

T. L. Aamodt, Assistant State Entomologist, University of Minnesota, writes:

" We have had considerable trouble with the sweet clover weevil, in northwestern Minnesota . . . this early summer and spring we found many fields that were fully destroyed by this insect . . . the insect did not allow the sweet clover to get up over 2 or 3 inches."

The insect is a small, gray, snout beetle or weevil about $\frac{3}{16}$ of an inch in length. It is usually seen upon the sweet clover plants where it feeds by cutting crescent shaped areas from the leaf margins. The damage is particularly notable on the young plants which may be killed outright. The severe defoliation caused at times by the weevils reduces the carrying capacity of the pasture for livestock, the value of the plants for hay and the nectar production of the blossoms. Since a large proportion of the sweet clover in the severely infested areas is plowed under for green manure, such defoliation seriously reduces the amount of plant material which would otherwise enrich the soil.

According to Thorsteinson[3] the adult beetles winterover amongst the stubble of sweet clover fields upon which they fed the previous summer. The beetles which survive the winter account for the early crop injury. Their period of egg laying while not definitely determined under North Dakota conditions is probably similar to that for Manitoba which ranges from the latter part of May to early August. The eggs, requiring about two weeks incubation period, hatch into small, curved, legless grubs which are white in color with brownish heads. Most of the grubs invade the upper six inches of soil where they feed upon the fine root hairs of the plants. Thorsteinson reports that the grubs require from 38 to 60 days to attain maturity under caged conditions. It is probable that this varying length of time is also required for their larval development in the field. The grubs, upon reaching maturity, change to pupae and after remaining in this stage for 7 to 12 days emerge as adults.

There is considerable overlapping of the stages. The egg, grub, pupa and adult stages may all be present in the field at a given time during the summer. It is found, however, that there is but one brood or generation per year. The adult beetles which survive the winter resume their activity in the spring and continue feeding upon the plants well into the following summer. As the wintered-over beetles begin to die about midsummer the young beetles of the new generation have already

(Continued on page 631)

[1] Sitona cylindricollis, (Fabr.)—A new and serious pest of sweet clover.

[2] Taken from the Bimonthly Bulletin Vol. IV. No. 6, July, 1942.

[3] Thorsteinson, A. J. A mimeographed report on the sweet clover weevil and its control in Manitoba, Dept. of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada.

Honey Treats for Hallowe'en

By Mrs. Benj. Nielsen

Grandmother's honey cookies. —Photo courtesy Kellogg Co.

Planning a party for Hallowe'en? No? Too busy—feel too tense? Well, even in these strenuous, rushed times it is wise to take some time out for fun, relaxation, "a breather"—call it what you wish. This change or slowing up seems to "recharge" flagging spirits, soothe overwrought tense nerves, and relax too-tired bodies so that one turns back to a routine schedule of "must-does" with renewed enthusiasm and energy, accomplishing even more in the long run.

A Hallowe'en party is one of the best ways to keep our young folks entertained and busy; off the streets; "ganging up" to prowl around; duty-bound to carry out the traditional stunts that keep special police officers on the jump until wee hours. An attic or barn, decked with cornstalks, leaves, and pumpkins and dimly lighted so ghosts can lurk. Plenty of room for really active and interesting games that provide an outlet for youths' exuberant spirits. Plenty of good food—tasty but not elaborate. For this several mothers can band together to pool ideas, efforts, and expense.

Perhaps you would like to invite a few cherished friends in for an hour or two of good talk and top the evening off with a bit of tasty food. An orange-gold pumpkin bowl filled with browning oak leaves and the last of the season's marigolds is easy to prepare and on buffet or table center, adds a charmingly festive and seasonal air. The dread, unlucky 13, without which no self - respecting Hallowe'en celebration is really quite complete, is easily applied to mugs, cups, or glasses using bright colored nail polish. After a few preliminary practice swishes, you will find you can apply the necessary strokes in a jiffy. After the "fracas" numbers are quickly removed with a bit of polish remover.

Here are some extra special honey treats. May they add a bit of spice and flavor to the occasion, be it a party or a small friendly get-together.

Honey Fruit Punch

One and ¼ cups honey, 3 cups hot double strength tea, juice 6 lemons, juice 4 oranges, 2 cups grape juice, 1 cup pineapple or gooseberry juice, 1 cup raspberry juice, 1 cup blackberry juice, and 2 quarts ice water.

Stir honey into hot tea. Cool. Combine with fruit juices and ice water. Pour over ice and garnish with mint leaves and slices of oranges and lemons. Serves 30.

Honey Eggnog

One-third cup honey, 3 egg yolks, ¼ teaspoon salt, 4 cups whole milk, scalded, ⅛ teaspoon salt, 3 egg whites, ¼ cup honey, ½ teaspoon vanilla.

Beat one-third cup honey into the egg yolks; add ¼ teaspoon salt and slowly stir into milk. Cook in double boiler until the mixture coats a spoon, stirring constantly. Allow to cool. Add ⅛ teaspoon salt to the egg whites and beat until stiff; then gradually beat in the remaining ¼ cup honey. Add to the custard with the vanilla. Mix thoroughly and chill 4 hours. Pile lightly in punch cups. Sprinkle with freshly grated nutmeg. Serves 8.

Honey Grapefruit Eggnog

One tablespoon honey, 1 cup grapefruit juice, 1 egg, few grains salt, and nutmeg.

Add honey to grapefruit juice at room temperature. Mix to blend thoroughly. Then chill. When ready to serve beat egg yolk until thick and lemon colored. Add honeyed grapefruit juice slowly, beating constantly. Add salt. Pour over stiffly beaten egg white. Mix well. Garnish with nutmeg grains. Serve at once.

thoroughly. Add brown sugar and beat well. Spread on warm cake.

Aurora, Nebr.

Honey Spiced Chocolate

Three squares grated chocolate, 1 cup cold water, ½ teaspoon cinnamon, 1 teaspoon vanilla, a few grains of salt, ¼ cup honey, 3 cups rich milk, 1 egg white, and ½ cup heavy cream, whipped.

Blend chocolate with water in a double-boiler and simmer over low heat for 20 minutes, stirring frequently. Add cinnamon, vanilla, and salt. Blend honey with 1 cup of the milk, and add to chocolate mixture. Scald the remaining milk and add. Beat egg white until stiff, then fold in whipped cream. Add to hot chocolate, removing immediately from heat. Beat with "muddler" or egg beater until well blended and frothy. Serves 6.

Honey Baked Stuffed Apples (orange colored)

Six firm apples, ½ cup honey, ½ cup water, ½ teaspoon orange coloring, 1 tablespoon butter, ½ teaspoon cinnamon, 1 cup chopped dates, ½ cup chopped nutmeats, ½ cup whipped cream, and candied citron.

Peel and core the apples. Then cut features, eyes, nose and mouth, on the side of each apple. Arrange in greased baking dish so that each will set flat in the bottom of the dish. Combine honey, water, butter, and cinnamon and simmer for 2 minutes. Add the orange coloring and pour over the apples. Bake 45 minutes, or until just tender, in a moderate oven, 350 degrees F. Turn once during baking to insure an even color throughout the apple. When cool, fill the centers with a mixture of the dates and nutmeats. Now for the features: Insert raisins in the holes cut for the eyes and nose, using pieces of raisins and a strip of candied cherry for the mouth. When ready to serve garnish with honey-sweetened whipped cream and a slice of candied ginger placed in the center of the whipped cream to resemble a stem.

Grandmother's Honey Cookies

One-half cup shortening, ½ cup sugar, ½ cup honey, 1 cup Kellogg's All-Bran, ¼ cup finely chopped nutmeats, 2½ cups sifted flour, ½ teaspoon baking powder, ½ teaspoon soda, few grains of salt, 1 teaspoon cinnamon, ½ teaspoon cloves, ¼ teaspoon ginger, and ⅓ cup water.

Blend shortening and sugar gradually. Then stir in honey gradually beating until light and fluffy. Add All-Bran and nutmeats. Sift flour with baking powder, soda, salt, cinnamon, cloves, and ginger and add to the creamed mixture alternately with the water. Chill thoroughly. Roll dough to about one-eighth inch thickness and cut with cookie cutter. Decorate with funny faces if desired, using raisins, whole nutmeats or bits of nutmeats as in photo. Bake in moderately hot oven, 375 degrees F., for about 12 minutes, watching carefully to prevent scorching. Yield: 2½ dozen cookies.

Frosted Honey Gingerbread Bars

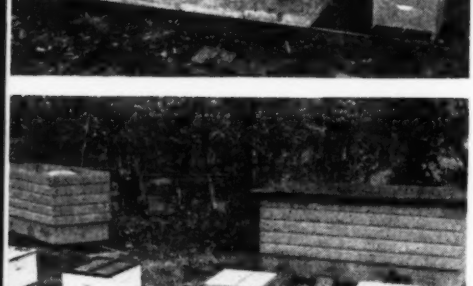
One-fourth cup shortening, ⅓ cup sugar, 1 egg, ½ cup honey, ½ cup Kellogg's All-Bran, ½ cup strong coffee, 1½ cups sifted flour, ¼ teaspoon soda, ¼ teaspoon salt, 1½ teaspoons baking powder, ½ teaspoon cinnamon, ⅛ teaspoon cloves, and ⅛ teaspoon ginger.

Blend shortening and sugar, thoroughly; add egg and beat until light and fluffy. Stir in honey, All-Bran, and cold coffee. Sift flour with soda, salt, baking powder, and spices and add to the first mixture. Bake in greased pan in moderate oven, 350 degrees F., about 30 minutes. Frost cake in pan with uncooked frosting as soon as it is taken from the oven. Cut into bars. Yield; 3 dozen 1¼x2¼ inch bars (9x13 inch pan).

Honey Brown Sugar Frosting

Two tablespoons butter, 1 tablespoon honey, and ⅔ cup brown sugar. Blend butter and honey together

Frosted honey gingerbread bars. —Photo courtesy Kellogg Co.



Packing Be ork Sta

By W ll

No. 1. In all but four of our apiaries colonies are placed on hive stands in groups of four to facilitate packing and unpacking. This is also a convenient arrangement for active season work. Running or alighting boards are used throughout the year. Entrance blocks are put in place when colonies are weighed in the fall and left until packing time.

No. 2. Covers are stacked on the hive stand. Entrance blocks and alighting boards are removed to make the next step easier.

No. 3. After the hives are broken loose from the bottom-boards by lifting with one hand in the entrance and one foot on the projecting bottom-board, the inside colonies of the block of four are set temporarily on top of the end colonies. The hive covers are then spread out on the hive stand and the bottom section of the packing case placed on them. This protects the hive covers all winter and they are instantly available when the case is unpacked in the spring.

No. 4. The bottom section of a case is approximately one foot deep and is shown empty here so construction may be seen.

No. 5. Two fellows easily set the colonies in from their positions in No. 3. The bottom-boards rest on the wood strips shown best in No. 4. This shallow section of packing case makes packing heavy two-story colonies easy as compared to lifting them over the edge of a one piece case as some beekeepers are forced to do.

No. 6. We use 24 inch bottom-boards as compared with the standard length of 22 inches. This permits four inches of packing in front and the use of a "bridge" 4 "x 16¼" x ⅜", which is merely placed on the projecting bottom-board and the loosened hive (loosened in No. 3.) slid ahead and thus holding it tightly against the front of the case and making a large tunnel to the entrance.

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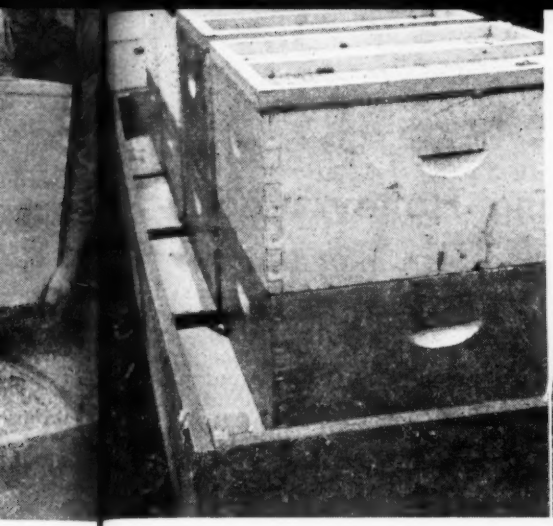

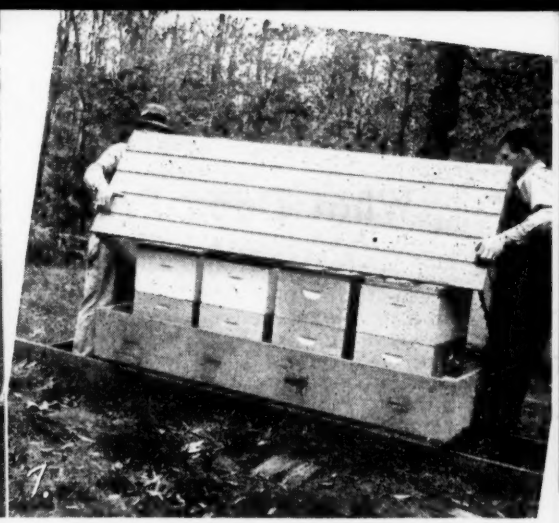

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By W...

No. 7. The top rim of the case is now placed on the bottom section, slipping down over it about two inches and preventing any rain beating in. The cases provide for approximately four inches of shavings in front and on the sides, six inches behind the colonies, three underneath the bottom-boards, and about eight inches on top. The six inches behind them is for the convenience of the fellow who handles the back end of the colonies in setting them in and out of the cases. Note also the space left between colonies, also for "finger room" in handling colonies in and out of the cases.

No. 8. Fine shavings are dumped in to complete the packing. These are removed from other cases as they are emptied (by means of a special scoop shovel) to make them ready for packing the next group of colonies. The whole sequence works smoothly and rapidly when two or more fellows are present. It is, of course, not adapted for one person working alone nor was it so intended.

No. 9. The full case is now ready for the cover which is being placed on it. Alighting boards are set up and nailed lightly in place so snow will not knock them down.

No. 10. The cover is wired to the case with about eight inches of soft wire which is wrapped around a nail on each end of the case and fastened permanently to the cover. This wire will last several years and insures the cover remaining in place unless removed by human hands. All parts of all cases are interchangeable. They are not cheap to build but are certainly easy and convenient to use. Perhaps the trend to no packing will continue, but until in New York State someone uses no packing, or tar paper alone, for a period of ten years and gets better results than ours, we'll stick with this method of wintering.

XUM

What Does Processing Honey Mean?

By Dr. J. E. Eckert

Associate Apiculturist at University of California, Davis, Calif.

The term "processed honey" took on a new significance when OPA allowed 1 cent a pound to cover the cost of "processing". The word process is used very loosely and is applied to many types of work. For example, it is used in connection with any course or method of operations, natural or artificial, in the preparation or manufacture of foods, or in the preparation of insurance papers or applications for insurance in Federal Housing, etc. In Amendment 5 of MPR 275, OPA defines the word as it applies to honey as follows: "Honey is considered 'processed' if it has been subjected to a straining or filtering process, other than the simple primary straining customarily done by the producer, so that it meets the standard for United States Fancy Extracted Honey as outlined in the circular 'United States Standards for Grades of Extracted Honey (effective March 15, 1943), issued by U. S. Dept. of Agriculture'." The operation is further limited by listing the item of increased cost of honey under dealer sales of domestic "bulk honey", under "The maximum price for domestic 'bulk honey' when sold by a person **other than the producer** thereof."

The ground for argument comes from the fact that producers who take special pride in producing a quality product, endeavor to make their honey meet the standard grade of U. S. Fancy and feel that they should be entitled to some compensation for their extra effort. However, the allowance of 1 cent per pound for "processing" applies to dealers and thus the producer is ruled out under MPR 275. But the point remains that the term "processed honey" needs to be further defined and possibly further limited in its use in the honey industry. For this reason, the following suggestions are made in order to invite further discussions to the end that the industry can adopt more concrete descriptive terms in connection with the various stages in the handling and preparation of honey for market.

The word "extracted" is gradually replacing the older term of "strained" to denote the difference between liquid and comb honey. Strained honey, as now used, properly refers to honey that has been strained between the time it leaves the extractor and is canned in bulk honey containers. In the normal procedure of getting honey out of the comb and into the bulk honey container, honey is freed of a large portion of the air bubbles and foreign particles injected during the extracting procedure. These manipulations may involve heating slightly to facilitate straining and to shorten the time the honey has to stand in a tank before a majority of the bubbles and wax particles rise to the surface. Or honey may simply be pumped into a large tank and there allowed to remain for a period of one week to three weeks to permit the honey to "clarify", by gravity. All of these procedures result in a more clarified product than if the honey was canned directly from the extractor. A majority of honey so handled will fall in Grade B and could be defined as "clarified honey" as distinct from honey that is "unclarified".

After the honey is canned, the next step is to prepare it for special types of trade. It is either sold to the manufacturer or baker or to the packer. If it is sold for industrial purposes, the honey should be further "conditioned" for that class of trade. The procedure generally involves heating to between 145° and 160° F, to liquefy the honey if it is granulated, or to facilitate straining. Sometimes the honey is blended to insure a product that is uniform in color and flavor. The heat treatment may also be used to retard early granulation. All of the various manipulations involved simply result in "conditioning" the honey for the next level of trade and usually produce a Grade A product, although if coarse strainers are used, the product may still be Grade B.

When honey is sold to the large packer, he prefers that it come to him simply as clarified honey. Since the heating of honey must be carefully done to prevent injury to its natural flavor and aroma, and since the large packer has to heat and strain and frequently blend honey in preparing it for the retail trade, he prefers that it come to him unheated. While the word "processing" is generally applied to the treatment of

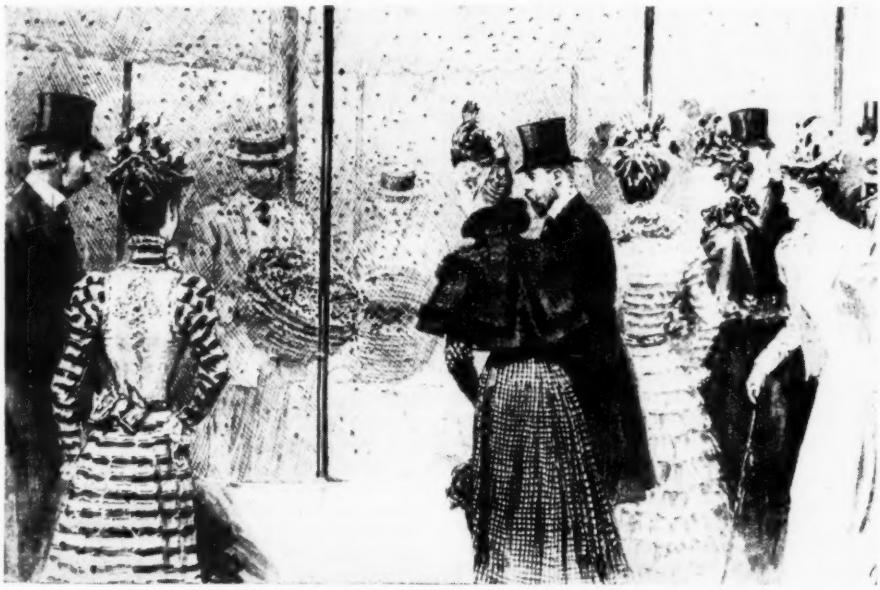
honey that involves heating to facilitate straining and blending, the operations should also include the proper application of heat to retard granulation and even to prevent fermentation. All of these manipulations tend to properly "condition" honey for the retail package and so can appropriately be referred to as "conditioning" processes.

A third practice frequently used in handling honey involves the use of filteraids to give the product a sparkle and brilliance that extracted honey seldom has naturally. Such methods may include even the dilution of honey, the use of filteraids in the strainers, and then the reduction of the water content to its normal amount by evaporation under vacuum. The color and flavor of the honey is generally reduced in such manipulations and here we have a truly "processed" product.

A fourth method of preparing honey for the retail trade involves special handling to promote fine granulation of a proper consistency that is neither too hard nor too soft. The Dyce Process of Creamed Honey is the leading example of efforts in this field and while it does not change the natural constituents of the honey used, it does involve special handling and preparation that would entitle it to be referred to as a "processed" product or as "processed honey".

Some of the imported honeys have to be so thoroughly cleaned that they might be referred to as being "renovated", but this term does not seem to fit in the honey picture. In some of our health food stores one sometimes finds labels that indicate honey samples as being "raw" or "uncooked". Neither term adds much to the desirability of the product unless one is used to eating raw or uncooked foods and then it may have some psychological value, although such labels imply that other honeys not so advertised must be "cooked".

It is obvious that the industry does not want to adopt terms to various manipulations in preparing honey for market that would in any way detract from the inherent goodness that the word honey has always had. While the present question is one that deals with the administration of an OPA order, it might be opportune to adopt for common usage, terms that more nearly describe various manipulations in the handling of honey than the all-inclusive word of "processing."



Display of prize-winning bees at the Agricultural Show in Portsmouth, 1898. The Duke and Dutchess of York, later George VI, are in the front of the picture. From a woodcut in Illustrated London News.—From The Bettman Archive, New York.

From the Field of Experience

POISON DUSTING SITUATION SERIOUS

By Cary W. Hartman

A few years ago in California dusting of poisonous insecticides by airplanes became so general and complaints so frequent from people who had suffered from the effects of the drifting poison, it was evident that something must be done to control it or at least take such steps as would result in the poisonous insecticide being confined to the crops for which it was intended. The reports coming in showed plainly that beekeepers were not the only losers by having their bees killed. Other farmers were suffering the loss of stock. There were reports of families suffering from the use of vegetables that had received a part of the escaping poison.

This resulted in several cases being brought against operators. Counties made ordinances against such careless use of poisons with the result that there has been little cause for complaint for the last two or three years. At present the trouble has commenced again and beekeepers who have lost bees by the poison are planning to see what can be done to save their property.

In the interest of the beekeepers we wrote for particulars from beekeepers who had suffered severe losses by having their bees poisoned. We received the following: "In regard to the dusting situation in this county, I am sorry to advise that our County Agricultural Commissioner has taken the attitude that he can do nothing to prevent the promiscuous broadcasting of poisons by the airplane until after our complaints have been received of damage resulting from the drifting poison over growing crops, and he has advised me by telephone that he will permit them to broadcast poison whenever, or wherever they secure contracts to dust. He states, however, that each company knows that it is subject to the provisions of the Agricultural Code. As far as he is concerned, then, all that he has to do is to grant licenses when application is made by a commercial operator and to take away that license if any complaints are made of injury caused by faulty application or by drifting poisons."

In contrast to this attitude, some county commissioners will not grant licenses to commercial operators for the application of poisons by methods that have proved in the past to be destructive to the interests of agriculture and of property owners adjacent to the fields to which poisons are applied. As a result of the situation in Yolo County, the beekeepers are confronted with the same old proposition, that if the bees are killed by the drifting poisons they can go to court and attempt to secure damages. Some of the beekeepers are inquiring into the possibility of getting out an injunction against the use of such equipment as will not confine the poison to the fields treated, just as soon as any case of damage occurs.

The whole poison situation to our way of thinking is very poorly regulated from a control standpoint, and sooner or later will have to be taken away from the present administrators and given over to some unbiased and more efficient regulatory agency, such as the Public Health Service. This applies not only to the County of Yolo or the State of California, but the entire country as a whole. We realize if this is done it will cause a hardship on the agricultural interests because it is conceivable that everyone who applies poison will have to secure a permit to do so. On the other hand, it is possible that the only recourse the beekeeper has of preventing irreplacable damage to his bees will be by securing an injunction to prevent the use of any method of applying the poisons that will not confine the materials used to the crops to which application is made, as soon as any case of damage occurs. If such injunctions can be made permanent it may tend to solve the situation for the areas in which the injunctions are operative. It may be necessary to get an injunction on the county basis, or even on the township basis if the methods relate to the distribution of poisons over pasture fields, hay crops, fruit drying yards, or location of apiaries.

Oakland, Calif.

[Reports from two other states, on destructive dusting, have been received recently. This menace must be controlled, for the good of all concerned.—Editor.]

NEW IDEAS ABOUT WINTERING

By Allan T. Brown

From April 1943, Canadian Bee Journal

Is our present system of wintering bees due for radical change? Are we going to discard our cumbersome wintering cases, and winter our bees with less insulation or none at all? The tide seems setting in that direction. Reports are coming to hand of beekeepers using only two or three thicknesses of corrugated paper board as protection with a wrapping of tar paper to exclude the weather. The writer has for several years wintered a number of colonies set inside corrugated paper cartons, with no packing whatever, the top folded in, and the whole weather-proofed with tar paper. These colonies have wintered with practically no losses, and built up quickly in the spring.

These colonies were well sheltered, and open to the south, receiving all the sunshine possible, and sometimes we think the tar paper is the principal factor. The black paper rapidly absorbs the sun's heat, and will become quite warm to the touch even on a very cold day. This tends to warm up the whole colony, and drives off, or allows, dampness to escape. It also permits the bees to rouse themselves and prevents the cluster becoming chilled through and through.

But now we read of beekeepers in Northern United States discarding packing altogether, and not without a considerable measure of success. In the December, 1941, issue of Canadian Bee Journal appeared an article by C. C. McKinnon, of St. Eugene, Ont., describing a trip through Indiana, where he had the opportunity of visiting some of the beekeepers of that state. Regarding wintering he says: "One large beekeeper told me that when he started many years ago, they packed their colonies in quadruple packing cases, then later in doubles, then singles, which was followed by tarpaper, and no packing at all. Admittedly their winters are not as severe as ours in Canada, but several beekeepers told me that in 1935 they had a continued spell of unusually cold weather which lasted four to five weeks at temperatures hanging from zero to 20 below with practically no snow. That is a cold spell, by anybody's standard. Those bees which were packed faired poorly, while those which were just sitting there came through with flying colors. As a result of such experiences, very few in Indiana pack their bees for winter."

And this from an article in the March, 1943, issue of "American Bee Journal" by Henry J. Rahmlow: "Here in Wisconsin we have quit talking about how to pack colonies for winter. Instead we are learning how to produce strong colonies that will come through the winter without packing. That has resulted in increased production because we then have stronger colonies during the honey flow."

We believe that in the southwestern counties of Ontario some bees are wintered without protection. It would be interesting to know just what results are obtained over a period of years. Some work along this line at Guelph and Ottawa would determine if this type of wintering is feasible in Ontario. If so, the considerable saving in labor, and cost of packing cases would go far in reducing production costs, which are one of our pressing problems.

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MORE ABOUT FIRE FROM BEE SMOKERS

By W. A. Stephens

In the last two issues of Gleanings you have mentioned emptying the contents of a bee smoker into a hole in the ground. This recalls an unfortunate experience I had some years ago.

I was assisting my brother in an apiary of about 80 colonies situated on what had been our home farm, but 90 miles from the present family home. It was during the summer recess of our college courses, and we had other jobs that permitted us to visit the bees occasionally.

The apiary was located in a clearing in a swamp, and at the end of our inspection I emptied the smoker into a hole in the ground, tramping out the fire until neither smoke nor sparks were visible. Perhaps you have guessed what happened. A week later my brother received a long distance telephone call that the apiary was on fire!

The farmer, who with a farm hand was hauling in hay in a near-by field, saw a column of smoke as the flames ran up through the branches of a spruce tree. The two of them ran to the scene. Some piles of supers were on fire and were tottering on the burning muck soil where they had been unloaded. With a long

pole it was possible to tip the pile away from the colonies, otherwise the whole apiary would have been a conflagration.

The loss was covered by insurance, but the lesson was none the less effective. It was some time before the possible source of the fire came to me, and with it the resolution never to empty a smoker in the vicinity of an apiary where there would be any possibility of fire. Afterwards I carried the smoker to the gravelled roadway where I emptied it and tramped out the fire.

I had to learn the lesson about carrying the lighted smoker in a truck a year or so later. Fortunately a burning tarpaulin was noticed in time to prevent any considerable damage.

Ottawa, Canada.

[It seems that mucky soil is a dangerous place to empty contents of lighted bee smokers. Clay or loamy soil should be safe, if the hole is deep enough. Possibly a can of water carried along to put out fire in the smokers is one solution, especially during very dry weather.—Ed.]

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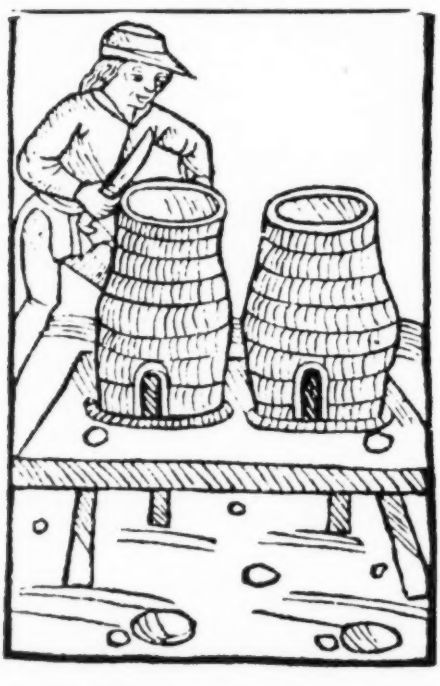

Peasants preparing the bee hive. One of the oldest illustrations of beekeeping. From Petrus Crescentius, the Usefulness of all Things, published in Strassburg, 1486.—Bettmann Archive, New York City.

LITTLE HELPS AROUND THE APIARY

By C. O. A. Kramer

Getting the Bees Out of the Supers

Around this time of the year, when most of us are removing surplus honey from the hives, I quite often smile to myself when I think of the various methods that I have used in the past to get the bees out of the supers and away from their treasured sweet. It was always an argument between the bees and myself as to who would remain in possession of the honey and it sometimes required rather strenuous efforts on my part to get away with the spoils.

One of my first efforts was to shake them off and, after a good shaking, I would place the clean comb into another empty super and resume my shaking with the next comb. I soon found that unless this was done at a mighty accelerated pace, two or three hundred bees were back on the combs before I quite had the empty super filled. Then I tried a combination of shaking and whisking them off with a long strand whisk broom, but with not much better success. Then I tried the carbolic acid method which for an amateur was rather expensive, and made both myself and the honey smell like a hospital ward after a rather strenuous day.

Then I tried the bee escape method which I found to be rather messy and, quite often, if there was some additional comb built on the bottom of the frame, this would plug up the bee-escape and 24 hours later all the bees were still in possession, instead of out, as the bee books certified they would be.

Now I use a method that does the job effectively and with a minimum of effort. I take off the supers that are well capped and pile them five, six or eight high on a board so that there are positively no openings whatever on the bottom. When I have a pile of supers high enough I place the escape cloth over the top of the pile. This escape cloth consists of a piece of brown canvas, the untreated variety, a yard square. I have seamed the cut edges to prevent them from fraying. On the top, in the exact center, is a cone made of ordinary galvanized screen wire with an opening at the top about ½-inch in diameter. This cone was made from a piece of window screen about 10 by 16 or 17 inches, fashion-

ed into a cone, stitched together with some of the loose wires from the screen. The bottom part was slit in about a dozen places, then bent flat so as to lay smoothly on the canvas and attached with half a dozen ½ or ⅜ inch split rivets which you can get in any hardware store. A hole is cut in the canvas just a little smaller than the base of the cone.

In operation you pile the supers on a board platform, place the escape cloth evenly over the top super and, evidently working their way upward, the bees fly out and cannot return. I find that it works much better if you pile your supers IN BACK of your hives instead of in the line of flight because as the bees escape, they make their way back to the parent hive and go about their business without returning. Last week I removed ten supers about three o'clock in the afternoon and at nightfall there were scarcely a dozen bees left in the ten supers.

I want to mention in passing that I cannot claim credit for this device. Dr. C. C. Miller in his "Fifty Years Among the Bees" mentions such a device in one of his chapters and I merely copied it and pass it along for what it is worth.

River Forest, Illinois.

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I BELIEVE IN HONEY

By I. Isaksen

My experience with honey covers many years and has been interesting and varied. Fifteen years ago I sold honey from house to house. Most people knew honey was good for a cold but few knew about the food value of honey. The medicinal values are numerous—furthermore, it is used in expensive cold creams and hand lotions.

An old miller whom I knew would have his wife put a few drops of liquid honey in his eyes each evening to remove the irritation from the dust. The next morning his eyes were clear and the soreness was gone. I suffered with rheumatism. Neither medicine nor the chiropractor gave me relief. I began eating fruit and vegetables and taking about four tablespoons of honey every day as a substitute for sugar. Today my rheumatism is gone and I am more active than younger men and very limber. My skin and complexion are in excellent condition. Although I am 76 years of age, most people take me for 50.

Mr. Isaksen takes pleasure in entertaining his friends with his ventriloquism.

I have 150 colonies of bees and my crop is from 15,000 to 20,000 pounds per year. I do all the labor connected with my honey business, but life holds much happiness for me for I make others happy with my hobby, which is ventriloquism.

Minneapolis, Minn.

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ONE MAN'S OPINION

On Communication of Bees

There has been much speculation on the subject of the ways and means that bees have of communicating with each other. It is obvious to anyone who has worked around them that they do. They not only can give information that food is available, but also where it can be found. Also, in some way they seem to be able to detail just enough workers to handle the job comfortably.

A general consensus of opinion seems to be that the information that is transmitted is limited to the fact that nectar or pollen is available. Then it is up to the others to find it for themselves. The dance that a laden bee performs is considered to be the act of communication. Then a general search of the neighborhood is made until the source is located. I could argue against that theory for some time but space is limited.

So, I will name just one instance that means to me that bees not only can communicate with each other,

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but they can give detailed information or instructions.

I generally have an observation hive in a northeast window of a small bungalow on my farm, situated about two hundred feet from the house. I use this bungalow as a den, hideout, workshop, honey house and storage place for agricultural implements and so forth. It is mighty handy for rainy days, or those occasions when I am supposed to be in the dog house.

One evening, several years ago, while I was watching the queen laying her daily dozen, I saw a strange bee dart in at the entrance and stick her tongue into a cell of honey. Three other bees made a grab for her, and she went out faster than she came in. She hung around the entrance for a few minutes, making several passes at trying to get in, but the three bees who had given her the bum's rush were still there. She went away, but in about five minutes was back with several friends. They tried to get in, but the bees at the entrance had called up reinforcements. They had taken up defense positions near the entrance, and none of the robbers could even alight on the tiny resting ledge outside of the entrance. It was most interesting and I sat and watched until dark, when naturally the attack ceased.

From what I had seen, I felt that the bees in the hive could take care of themselves, so I left them. My only thought was to go back in the morning to see if the attack would be renewed.

I thought then and still do, that the first bee found something worth stealing. She also found that it was no job to do singlehanded. So she went home and brought a few friends. Still they were not strong enough, so the action was broken off at dusk.

Early the next morning, right after breakfast, I was sitting on the porch, enjoying the calm of a morning in the country, when a call from the better-half in the kitchen brought me back to earth with a rush. She wanted to know why so many bees were hanging around the northeast window of the house. When I looked there were hundreds of bees flying with the characteristic stance of robbers—darting about, with their legs hanging, and with the sneaky look that robbers always seem to have. They were only at that window, and it was in the same relative position in our house that the observation hive was in, in the bungalow.

That was enough for me. I made the bungalow in two seconds flat. Sure enough, a battle royal was on. The robbers had crashed in, and were taking the honey out so fast that you could actually see it go. They were starting on the sugar syrup in the feeder block when I got there. While many of the inmates of the hive were still battling, a lot of them had given up and were clustered in the top and taking no interest in what was going on.

Is it illogical to suppose that the first bee that I saw went home, told a few friends that there was honey for the taking? And from her observations, that there were only a few bees defending the position, so only a few bees would be necessary to break through? And when they found that the defenders were better fighters than they thought, that they had waited until morning before bringing up the main army?

Would it not appear that while most of the racketeers had understood the directions, some had the wrong address? They went to the northeast window of the house behind the hives, but they went to the dwelling, and not to the bungalow. If, when they had a smell or a taste of the robbed honey, they had rushed out and canvassed the neighborhood, why did they concentrate on the northeast window of the house? Remember, they were only at the exactly corresponding window of a house two hundred feet from the spot they were looking for.

You can't convince me that they did not have detailed instructions about where to go and what to look for. But don't ask me how they did it. I understand a little about bee language, but not that much. I can only record what I saw—without the benefit of too much imagination.

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SECOND GLANCES

By C. M. Isaacson

"The old order changeth" might well be the substance of Dr. Farrar's article (page 514). For, as he clearly shows, wintering methods **have** changed considerably during the past several decades. With two of the premises given, little argument can be found. That it is **what kind** of colonies we winter (and that applies both to fall and to results in

spring) that is the important thing is certainly true. And that a vigorous (not necessarily only young) queen and an adequate supply of both honey and pollen are essential no one will dispute. But from here on, differences may arise, so the experiments over a period of years that he gives results from— and the in-the-field trial and error ones of beekeepers, are of real value. The value of feeding extra pollen and pollen substitutes—if increase is wanted (and so extra strong early colonies to obtain it from) the beneficial results seem to be established. To pack or not to pack is probably dependent largely on location. Dr. Farrar has found it not of profitable value, but up here in the commercial beekeeping region of Northern Minnesota— where the temperatures average very considerably lower than shown on the graph included in the article— results seem to be decidedly in favor of some packing. (I wonder how the screened hive experiment would do here). And the three-story brood chamber—do results from two brood stories justify the added investment in equipment? Yes, there are many points yet to decide upon—and all things change.

That small hints are of large value is often true. The picture and item on page 519 show clearly a simple and practical way of handling the muss of packing material — when shavings or similar substances are used as such. It will be of use to many.

What really is new? The past several years have seen much discussion of the top entrance and the wide acceptance (in cold climates especially) of some form of upper entrance for wintering. Rev. Langstroth was aware of its value and used it over fifty years ago! That is why he, and others of his kind, stand out so strongly; their ideas are always "young" and refuse to be pushed into obscurity (page 520).

Allen Latham is always thorough. His discussion of the top entrance is no exception (page 521). Bone-dry wintering, a clear summer entrance, freedom from attacks by skunks, less manipulation, all are advantages of more or less value, that he reports. But the disadvantages from his experience; difficulty in examination (could not this be lessened by placing the entrance back on the supers and letting the bees resume their traffic there while examining the brood chamber off to one side?), clogging of the brood nest with honey, difficulty in applying swarm control methods (and consequent uncertainty of a crop), all weigh quite heavily against it. And a most interesting item is his mention of the bees gnawing lower entrances whenever possible. Is this just "orneriness", or do they prefer a lower opening in summer?

Efficiency is always desirable in the busy season of extracting the honey crop. Accordingly, the article by Mr. Taylor (page 522) is of more than ordinary value. Of course, many of the devices mentioned may be already in use by various beekeepers; but to others, and with those outfits not as efficiently planned, several should be of definite help. The automatic, self-skimming honey sump and the flash heater are two examples — those operators not having them would do well to study the details of the article carefully. In these times of deficient manpower, any labor-saving device should be adopted wherever possible.

"Back-lot Extracting" (page 525). The title is descriptive, and the material following does a good job of outlining a clear and practical system of extracting for the small bee keeper — from apiary to the final product.

A chuckle and a hint in the same paragraph is all one can ask of any writer. One Man's Opinion (page 532) does this in mentioning the use of Boraxo—and lye—for removing propolis. Better try the Boraxo.

A floor price for honey may be necessary to avoid a disastrous tumble in prices at some future date (page 535), but one can't help regretting the necessity and wishing for some other method to ease the shock. The more favors we receive as an industry, the more regulation we will eventually have to accept. But bees are of such value to agriculture as a whole that some such protection will doubtless be advisable; especially when sugar becomes unrationed again (see editorial, page 544).

The Honey Institute News Notes (page 566) mention a pleasing increase in contributions from honey producers. Good. Let's keep it up; to let up now, would be to lose the gains secured for us by the Institute these past years.

Middle River, Minnesota.

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From North, East, West and South

NORTHERN CALIFORNIA, Sept. 6

Weather: The season's weather in the Bay area has not been far from our average summer weather—no rain—very few clouds but perhaps a little cooler than the average that beekeepers thought was the best for honey production. Now that the crop of our entire territory is rapidly reaching the can there seems to be a general complaint that the weather for the entire season has been too cold for the most satisfactory production.

Crop Conditions: Beekeepers in the star thistle area are pretty well agreed that the crop will average 60 pounds to the colony. When the crop is all in we can make the final count and know what we have to show for our summer's work. When that time comes we will not account for all of our losses by a cool summer, for grass fires and floods must bear their share. Then there is a greater menace and it promises to cause us a greater loss as time moves on unless we find a way to control it far better than we have today. The beekeeping industry is in graver danger than we realize from the promiscuous broadcasting of poisons to crops. With farming operations ever and ever becoming "industrialized", quantity methods will be adopted in plowing, harvesting, marketing, controlling insects, etc.

Miscellaneous: We are not the only state where the beekeeping industry is meeting losses by the drifting of poisonous insecticides. A report comes in today of another loss in our cotton area and another from our melon district and still another from Nebraska which reveals that in two counties they have lost more than 7,000 colonies in commercial apiaries alone during the past two years due to the dusting of cotton.

As we see the issue now, the entire beekeeping industry must be united in certain fundamental concepts of democratic rights or they will be shunted out of cultivated areas entirely. Let's begin by seeing that every beekeeper in our county is a member of our county association and that our county association is affiliated with the state association.

Dr. J. E. Eckert of the University of California, in the Demonstration Apiary at Davis, met with a freak accident while extracting and had to spend several days in the hospital. While removing a wooden cover of the radial extractor, with the machine loaded and in full motion, one end of the cover slipped into the extractor and was thrown out, striking him across the throat, causing severe bruises and a deep cut in the back of his throat but broke no bones, blood vessels or important muscles. Had the lid hit a bit lower or higher, the result would have been quite serious. Beekeepers everywhere will be sorry to hear of Dr. Eckert's injury but pleased to learn that he is now well on the road to complete recovery.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, Sept. 2

Weather in Southern California is just cool enough to make a coat feel good in the evening and an extra blanket welcome at night. The days are delightful and warm enough for bees to gather any stray bits of available nectar or pollen.

Market: Buyers who are connected with packing or distributing plants seem to have been able to secure most of the honey from the producers in Southern California this season, making it difficult for the regular brokers to get it. Honey and wax are in big demand at ceiling prices.

Miscellaneous: The meeting held in Los Angeles since our last letter, where beekeepers, brokers, packers, distributors, and others interested in honey were invited to meet with representatives of the OPA, was well attended. Representatives from different parts of the West were present and entered freely into the discussions. The feeling seemed to be that the ceiling price was equitable and fair.

There is considerable blue curl on some ranges and it is yielding some

nectar. While there is a scattering of this plant, we do not look for any surplus from that source.

Wild buckwheat has turned brown over most of the country and it is only in favored spots that it is still yielding. Sages are past and very little nectar is coming in on most summer ranges.

Help has been very hard to get and some beekeepers have taken the supers of honey from the hives and stored in a central extracting plant and are extracting at their pleasure. Some return these wet combs to the bees for "licking up", while others are prepared to care for the combs by fumigation.

We have talked with many beekeepers who have had experience in moving bees to more promising fields and without exception they say, "Move only strong, populous colonies if you expect them to gather surplus".

When I saw the picture of the young soldier boy on page 483, August Gleanings, and read the name Michael Lackner, it brought recollections. I thought of my name, Linus Lackner Andrews; that my mother's name was Elizabeth Lackner; and that there is likely a cousin relationship there somewheres. Both of my parents were Canadians and were married in Hawksville, Ontario, and moved to Southern Oregon in the early seventies. Hope that Michael sees this and drops me a line.

In conversation with a fellow beekeeper a few days ago we got on the subject of bee ranges and the changes that have taken place since our coming to this country. Where there were moist spots and swamps and and water seeping out of the hillsides, with natural honey producing plants growing all around, we now find plowed fields and wells that bring the water from deep down underneath leaving the surface of the ground dry. Plowed fields and burned-over ground account for thousands of acres of our one time best bee ranges of a comparatively few years ago. Aside from the blue curl that comes on some of these ranges, practically nothing in the way of honey plants has appeared to replace the loss to the beekeeper. 'Tis true, we have the orange, alfalfa, etc, that probably make up for most of the loss.—L. L. Andrews, Corona, Calif.

WYOMING, September 5

Weather: The subject we talk so much about, but have to take as it comes has been unusually variable both in it's promises and characteristics. Winter and spring losses were heavy. Much feeding was done over the State. The response was a good build-up of most colonies, and the above normal rainfall for April, May and June made many of us look forward to a bumper crop in spite of the cool rainy weather which prevailed most of that time. Shortly after the honey flow started the change was so decidedly the reverse that prospects lessened rapidly, and the hot dry winds soon ended the flow.

The Crop: Again the crop is spotted. The Wheatland country which had so many poor seasons reports a bumper yield, while the adjoining county reports the poorest crop for some years. The Basin country which is usually at the head of the list had about the same yield as last year. Here in northeastern Wyoming extracting is not completed but it is most doubtful if this year's production will exceed 75% of 1942.

Honey Plants: Subsoil moisture is still lacking, and in many localities the grasshoppers have done considerable damage and I believe present a threat for next year. Considerable alfalfa acreage was damaged by late spring freezes. Weevil and beetles were bad in some areas.

Miscellaneous: The next big job when extracting is finished will be fall inspection and preparation for winter. Bees are in good average condition. Some beekeepers have reported an unusual number of cases of foulbrood, probably caused by the almost entire exhaustion of winter stores. Fremont County has had a large influx of out-of-state bees, amounting to much over-crowding, I am told.

Here's a little trick I got onto several years ago that might be of use to some who have had trouble with breaking new combs in radial extractors: Instead of being so exact about the extractor building up to speed very slowly, just take a peep as you continue your uncapping and as soon as a little honey is being thrown out, disengage the disc and

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let it coast while you uncap a comb or two and throw it in again. Do this several times, depending upon temperature, thickness of the honey, and weight of the combs and you will not have a single broken comb.

Herb Addleman of Douglas has been around calling on his brother beekeepers over the State in an effort to re-organize the Wyoming State Beekeepers' Association. This is a most commendable and timely undertaking. There are many and varied problems coming up in agriculture these days (and beekeeping is no exception) that require a good organization to handle successfully.

Honey buyers are plentiful these days, fine fellows, too. I wish I could have met some of them back in the 30's.—Earl C. Reed, Ranchester, Wyo.

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ALABAMA, September 4

Weather: This summer has been one of the hottest we have had in eight years. Rainfall has been spotted. North Alabama has suffered from drouth which shortened somewhat the yield of honey, while other spots in the state have had too much moisture at times.

Honey has been moving rapidly out of the beekeepers' hands at ceiling or near ceiling prices. Most of it has gone either direct to the retail trade or to the local grocer. Some beekeepers who have been producing honey during the summer failed to do so this year due to the good package and queen market and the prospect for next season. A good share of the honey that has been finding its way to the consumer has gone into increase of colonies for next year's package production.

Prospects are favorable for a good yield of package bees and queens in 1944. Orders are already coming in for delivery next season. Those who did not get the packages they wanted this year are really trying to get in early for next year. Work on next year's cages and other needed supplies is already under way with most beekeepers. Supplies are difficult to obtain but the wise beekeeper who started in time has sufficient supplies to assure a normal output. Labor is still a problem but a good many of the "Old Timers" who had been leaving things up to the help got back into the bees again this year and say they are ready for another season when the time comes.—Eugene D. Cutts, Montgomery, Ala.

UTAH, September 4

Weather: Temperatures fell in most Utah honey producing sections on about the first of the month, showing late honey flows in the lower valleys and stopping nectar secretions entirely in the higher ones. If weather history repeats itself much more honey will have been secured from late seed alfalfa, rabbit brush, and other fall plants by the time this article appears.

Honey Crop: It is too early to make an authoritative statement but Utah's honey crop will be definitely smaller than last year. Nearly all of the sections that yielded short crops last year are yielding bounteous ones this year and the ones which in 1942 yielded a two-can per colony average have this year dropped to around 30 lbs. This equalization increases one's faith in the justice of things, but I'm afraid it takes many more than two years for everyone to get what he thinks is a fair deal in the honey business. The fact remains that Utah will have much less honey and a poorer quality of honey this year than last. Delta is a bright spot in the picture. Most of the producers there who moved in after getting a good crop of orange and buckwheat in California are now averaging a can per colony of Utah alfalfa honey.

Miscellaneous: Whenever we have long periods of nectar dearth in Utah, we have trouble with bee poisoning. This year many losses have occurred. Arsenic applied to the crops and orchards in one form and another is the culprit. Many colonies which lost their field forces early (apparently through orchard spray) built up again in time for the honey flow, but those affected in June, July, and August by other insect control measures in alfalfa fields, etc., did not revive in time to gather a crop. Many apiaries were a total loss.

Our losses are made less painful by the fact that the Agricultural College is thoroughly investigating every known case. While little is being done by way of treatment, valuable research data is being collected which is sure to lead in future

years to reliable methods of treatment and prevention. Those who are making the investigation are coming to the conclusion that no one source of arsenic and no one program of pest control is to blame for Utah losses. Judging from the many conflicting reports of bee men and scientists of experience there are as many causes of adult bee poisoning as there are causes of the present world war. Until more light is shed on the poison problem and until a rapid means is found to remove causes, the wise and alert bee man who sees his field bees dying by the thousands will not only notify the College Extension Service and pick up a few hundred dead bees for analysis, but will immediately move the affected apiary to a new location.—William Moran, Salt Lake City, Utah.

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BRITISH COLUMBIA, Aug. 29

Honey Crop: By this time the beekeeper will know where he stands in the matter of a crop of honey, and the results in British Columbia, in spite of good prospects in late June, have been very disappointing. Conditions throughout the province vary from practically nil to an average of 50 pounds per colony at the best and it now appears that we will have the smallest honey crop in years.

This is almost disastrous in the face of the unprecedented demand for honey, and now to add to our troubles, honey is placed on the list of rationed foods.

Miscellaneous: Most of us have been busy for weeks turning away business and trying to institute voluntary rationing by limiting sales and now that this has been taken out of our hands it brings a certain amount of relief but at the same time it is very evident that the rationing of honey is going to work a hardship on the average producer and on those who have been accustomed to selling their crop in whole, or in part, direct to the consumer, selling to many customers their whole year's supply at one time.

At this time the details of the scheme have not been announced so that it is a little difficult to estimate in full its probable effect on our trade. Rightly or wrongly, the rationing of honey is regarded by some with suspicion as the move to force all honey through the wholesaler and similar organizations.

Insofar as this Okanagan Valley is concerned the small crop is accounted for in part by unusually heavy losses from spray poisoning. The Provincial Department of Agriculture is carrying out experiments in test orchards, using the regular arsenate of lead spray but adding either creosote or crude carbolic acid as a bee repellent with the promise of the Department that if the experiments prove that the bees can be saved by such means, the use of these repellents will be made compulsory.

Initial experiments are to determine correct proportions of creosote or carbolic acid to insure against burning foliage or fruit.

Two thousand new registrations have been added to the list of British Columbia beekeepers because of heavy importations of package bees last spring and the necessity of securing a permit in order to purchase sugar for winter feed for the bees.—G. F. Pearcey, Kelowna, British Columbia.

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INDIANA, September 5

Honey Crop: Bees in strong colonies, on the verge of starvation June 15, have since stored about 100 pounds of clover honey. We have left half of it on the hives, as one can never be sure of a fall flow sufficient for winter stores except, perhaps, in lowland areas. Nevertheless, a considerable amount of heartsease is now being stored, with goldenrod and aster still in prospect. Goldenrod has been in bloom since about August 20 but the bees seldom gather nectar from the early upland species, which usually are covered by striped and black bugs.

Plant Conditions: Due to abundant rainfall throughout the spring and summer, clover of all kinds has a good start, and with suitable weather conditions, next year's crop seems assured.

Market: Practically all honey produced in this locality is being sold direct to consumers at near ceiling prices and in small containers—mostly in 5-lb. pails and jars. At the present rate honey is moving, probably the entire crop will be sold out before the end of the year.—E. S. Miller, Valparaiso, Indiana.

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SOUTH DAKOTA, Sept. 6

Weather: It feels as though our summer is over leaving cool breezes and gray clouds scudding along the sky while a day now and then brings a rain or a refreshing drizzle to add to an already moist earth. If you've got anything to do rain always comes at the wrong time, but if it doesn't come at all you're sunk so what's the use of crabbing.

The moisture situation seems to be about ideal for preparing perennial and biennial plants for the eventual winter.

We are aware of the end of a definite period in the garden, too, for we had the last of the edible ears from the sweet corn patch for dinner tonight. Too bad!

Honey Crop: For quality and quantity this season compares favorably with our best with even late two-pound packages storing as much as 100 pounds. Since this season was my first extensive experience with packages I found that three pounders have it all over the twos. The threes started right off and carried on while the twos had to wait for their second wind.

There is no marketing problem; we only have to worry about how to supply all the orders.

Miscellaneous: Along about the first of August when the honey flow began to taper down I decided to try a stunt which I call "high pressuring packages". At that time they had their supers pretty well filled, but it was evident they couldn't fill another full-depth. The only way they could do it would be by uniting them, which I did, placing a full-depth of sheets above one colony and setting the other colony on top. The result was an enormous force of bees working on one super. The way it looks every super in the yard will be filled. The system makes the utmost use of equipment and bees and at the same time the brood chamber which is placed on top automatically becomes a super, too. I haven't investigated those colonies yet but I feel sure the doubling up process has resulted in maximum honey production.

The sweet clover we seeded last spring failed to make a stand which is a sad state of affairs as we depend on it for cattle pasture as well as bee range. We concluded there might still be a chance to get a clover stand for next year so we seeded a grain stubble field with scarified clover seed August 20. Fortunately a nice rain fell shortly thereafter and the clover sprouted at once. The little plants have already begun to shoot their second leaves so if they are given two months of growing weather it seems possible they will establish root systems strong enough to withstand the winter. By next spring I will be better able to report on how this emergency experiment turned out.

In a few days now the extractors will be whirling and the crop will be in cans.—J. F. Norgren, Junius, S. Dak.

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MISSISSIPPI, September 4

Weather: This has been the hottest, driest summer in about 50 years. The last heavy rain at State College was on April 18 and only one or two showers of any value fell during the entire summer. This northern part of the state suffered considerably more from drouth than the southern half.

Honey Crop: In spite of the drouth bees have done very well in some localities. In the southeastern part of the state a few yields ranging from 165 pounds to 175 pounds per colony were reported in July with a flow just beginning on "Mexican clover." In the vicinity of State College colonies have averaged about 75 pounds, as compared with 85 in 1942 and 165 in 1941. Vetch did not yield as well as it usually does. There was a better stand of sweet clover along highways, railroad embankments, and field margins than for several years, but the very dry season reduced the crop from that source. Farther north, near Tupelo, conditions were better and a yield of 100 pounds per colony was obtained in a few cases. In the Delta the drouth also cut the crop considerably. Several beekeepers report about 50 pounds average already extracted, with hives heavy at present. One apiary starting with 100 weak colonies in the spring extracted approximately 5,000 pounds, and had made increase to 242 colo-

nies, well stocked with honey, by the latter part of August.

Market: Producers are having no trouble in most cases disposing of the crop locally. Most of the small beekeepers are selling direct to consumers at $2.00 per 10-pound can, although several sales in the Delta were reported at $1.25 to $1.50 for this size container.—Clay Lyle, State College, Mississippi.

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SASKATCHEWAN, Sept. 8

Weather: The weather here has turned quite cool and, of course, the honey flow is now over. It carried on during this year later than usual. However, it started some two weeks later than usual so that the duration was about the same as in previous years. There was a good honey flow in most districts until mid-August and in some of the southern districts it carried on until the end of the third week in August.

Honey Crop: Reports on the honey crop to date indicate that it will be about normal or perhaps slightly better than normal.

Miscellaneous: The demand for honey has been unprecedented during the last few weeks and beekeepers right across Canada have been deluged with requests for honey. Beekeepers have found it very easy to dispose of their honey as extracted direct to consumers and it was not only the small beekeeper who was able to do this but the carload shipper also. As jams, syrups, and honey are all in short supply, there were some people who were securing more than their share and doing a certain amount of hoarding. This aggravated the shortages and to avoid this condition the Wartime Prices and Trade Board rationed honey as of September 2 and now it can only be purchased on the presentation of ration coupons. Purchasers have the choice of honey, jellies, syrup, marmalade, or jams, all on the same coupons. One coupon matures every two weeks and entitles the holder to half a pound of honey. Owing to the small value of the coupon, difficulty is expected by beekeepers in marketing their remaining honey in their normal packs.—R. M. Pugh, Bee Division, Fort Qu'Appelle, Sask.

ONTARIO, Sept. 7

Weather: August in this part of Ontario has been unusually cloudy with a number of heavy rains. Today, the ground is again soaked following a downpour of over an inch yesterday. This means that clover has passed all danger of being injured by drouth this fall.

Honey Crop: In localities where buckwheat is grown, the acreage is much larger than usual. The crop of buckwheat honey may be above the average. Some of our apiaries are in buckwheat locations and will have at least four times as much buckwheat honey as we had last season. We have had no definite reports as to the crop of clover honey for Ontario. From private reports we are told that the crop will be about 75% of the average. If bees had been up to usual strength, the crop would have been at least 25% larger.

Miscellaneous: Locally we have had a medium crop that moved out rapidly to consumers until a freezing order was placed on honey at midnight on August 22nd. At that date it was estimated by many that at least 65% of the white honey crop had been sold to consumers and to many of us this freezing order, followed by drastic rationing of honey, was, to say the least, of very doubtful value. Two coupons each month, each with a value of ½ pound of honey constitute all that one person can purchase. That figures out at 12 pounds per year to each person, but as such small quantities can be bought at once, it automatically shuts out many from buying from the producer, as few have honey in such small containers.

This will tend to drive all business to stores. While indignation is general among the beekeepers — particularly among the smaller producers—we notice that the chain stores get the major part of the blame. From August 22 until September 2 honey was frozen everywhere, and it was noticed that one chain store in particular had shelves well stocked with half-pound jars of honey ready for sale on September 2. Whether we like it or not, the order is in force, and while we regret that many of our old customers did not

get their usual supply of honey, we are not responsible for the present state of affairs. For years we have been trying to educate our local people as to the value of honey as a food regardless of sugar scarcity, and many families purchased from 100 to 300 pounds annually. Now they can buy only a half pound each, every two weeks, while people who buy honey only when sugar is scarce, can get the same amount.

Before the ban on selling came into effect, in three forenoons that we opened for sale, some 10,000 pounds went out before the noon hour each day. Purchasers were admitted to the honey room by ticket with amount given that each one could have, and a traffic cop was on hand to regulate parking.

No change has been made in price ceilings and from latest advice received from the Ontario Honey Producers' Co-operative and other purchasers of honey, it appears that the dark grades of honey will sell at the same price as the light grades. With such small purchases allowed, we have some doubt as to whether the fair crop of buckwheat we have will move or not. Coupon "D" used for purchase of honey, marmalade, jellies, jams, maple syrup, corn syrup, etc., will also purchase an extra half pound of sugar if the customer so prefers. It is my guess that many who would buy honey if available in larger quantities at a lower price, will take the sugar that costs less than half the price of honey in such small containers. While the order under discussion is extremely unpopular with beekeepers, all we can do is wait and see the effect on the public in general. It is the law of the land and as such, it is our duty to observe its provisions.

We have mentioned that buckwheat was very plentiful this year in many parts of Ontario owing to abnormally backward spring that prevented usual crops being sown until too late. While the crop of buckwheat honey is not heavy with us except in Victoria Co., there has however been a long flow for a month and we notice that brood nests are much heavier than they were a year ago. This means a much lighter feeding bill, and colonies should be in good shape for winter.

With conditions just right, it is surprising what a few bees can do in a short time. On June 5 last, a dozen two-pound packages arrived unexpectedly. All bloom was over for the time and we hardly knew what to do with the bees. Seven packages were given to queenless colonies in different yards, and the five left over were handed to me. They were placed in hives with five drawn combs each, fed every night and combs of foundation added as needed. Exactly one month later these five were moved 50 miles away to a location that had sweet clover with buckwheat to follow. One of the five had queen trouble and has but one super of honey. The other four have produced well over 150 pounds each and are equal in strength to any colony in the apiary.—J. L. Byer, Markham, Ontario.

AMENDMENT 87 TO RATIONING ORDER 3—SUGAR RATIONING REGULATIONS

September 10, 1943, OPA-3040

Because some beekeepers are facing loss of their bees due to the lack of sufficient natural food, the Office of Price Administration today authorized the issuance of additional sugar allotments to beekeepers registered with OPA as industrial users.

The additional sugar allotment, which is limited to a maximum of 15 pounds per bee colony per year, is necessary because of the short blossoming season in certain parts of the country, OPA stated. This development has caused a deficiency in the natural food supplies of bees.

Application for the supplemental allotment should be made in person or by mail, to the local OPA rationing board on Form R-315. The application should show (1) the amount of the additional sugar allowance requested, (2) the number of colonies of bees for which the allowance is requested, (3) that the original sugar allowance for the calendar year has been obtained and used for feeding bees, and (4) that the additional sugar requested is required to prevent the loss of the bees.

In addition, a certification of the Department of Agriculture county war board showing that the additional sugar is necessary to prevent the loss of the bees must be attached to the application.

This action is contained in Amendment No. 87 to Rationing Order No. 3 (Sugar Rationing Regulations), effective September 14, 1943.—Office of Price Administration.

Members of the Honey Industry Advisory Committee.

Seated around the table from left to right: John H. Paton, John G. Paton Co., New York City; R. F. Remer, Mgr., Sioux Honey Assn., Sioux City, Iowa; Alan I. Root, Genl. Mgr., A. I. Root & Co., Medina, Ohio; E. Schuemann, D. Steengrafe & Co., New York City; M. S. Stone, Superior Honey Company, Los Angeles, Calif.; W. F. Straub, W. F. Straub & Company, Chicago, Ill.; Lewis M. White, Portland, Oregon; J. P. Delafield, Special Commodities Branch, FDA; H. C. Albin, Chief, Special Commodities Branch, FDA; H. J. Clay, Special Commodities Branch, FDA; R. O. Denham, Office of the Solicitor, FDA; Miss Kelley, Reporter, Processors Branch, FDA; R. H. Kelty, Extension Specialist in Agriculture Cooperative Ext. Work, East Lansing, Mich.; Jerome Franks (alternate) Ohio Apiaries Coop. Assn., Delaware, Ohio; A. D. Hiett, G. B. Lewis Co., Lynchburg, Virginia; Lynn M. Dewey, Merrit Island, Florida; Ed Burleson, T. W. Burleson and Son, Waxahachie, Texas; L. W. Beyer, Jr., Jewett & Sherman Company, Cleveland, Ohio; D. B. Bradshaw, R. D. Bradshaw & Son, Wendell, Idaho; Dr. E. F. Phillips, Professor of Beekeeping, Cornell University, Ithaca, N. Y. In rear, at left: Jos. Boyle, Marketing Reports Division, FDA; Elmer Hallowell, Honey Economist, OPA; W. T. Dedicott, Chief, Sugar Section, OPA; C. D. Schoolcraft, Fruit & Vegetable Branch, FDA; G. P. Walton, Special Commodities Branch, FDA. On the right: Jas. I. Hambleton, Bee Culture Laboratories, Agriculture Research Admin., USDA; S. A. Jones, Division of Agricultural Statistics, B.A.E.; Frank E. Todd, Agriculture Research Admin., Division of Bee Culture, USDA.

Honey Industry Advisory Committee Meeting

The Honey Industry Advisory Committee in its first meeting the past week with the War Food Administration said that substantial imports of honey from Latin American and other countries will be needed this year if bakers, packers, and other large users of honey are to obtain adequate supplies of the product.

Representatives of the honey industry from all parts of the country serving on the committee also stated that during recent weeks crop prospects indicated considerably smaller production of honey than was expected earlier. Nectar flow was cut short unusually early this season by rainy weather. Whereas earlier in the year a larger crop than that of 1942 was anticipated, it now appears that the 1943 output of honey may be even less than last year's short crop of 179,000,000 pounds.

In spite of the short crop, representatives of the honey industry were of the opinion that Food Distribution Order 47, which allows food manufacturers 120 percent of 1941 use, was satisfactory.

Marketing, manpower and containers were among the subjects discussed by the advisory committee. Labor shortages, the industry said, can be expected to curtail honey production for the coming season.

WFA officials explained to the industry representatives the procedure followed in the enforcement of the provisions of Food Distribution Orders 47 and 47-1, (see page 621) covering honey distribution. The cooperation of the industry was solicited in reporting violations of the orders, either directly to Washington or to local War Food Administration officers.

A task committee was appointed to assist in compiling a list of critical materials which will be needed by the honey industry to insure ample supplies.

Harold J. Clay, of the Special Commodities Branch, Food Distribution Administration, is the Government Chairman of the Honey Industry Advisory Committee. — United States Department of Agriculture, Washington, D. C.

XUM

Editorials

The Office of Price Administration has released the following in regard to Maximum Price Regulation 275 covering extracted honey. **"Honey Spread:** The Regulation applies to honey spreads and to all forms of pure honey except honey sold entirely in combs."

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More sugar is to be purchased by the United States, it is reported. The government is to buy a minimum of 4,000,000 short tons of 1944 Cuban Sugar Crop, or 1,000,000 pounds more than last year. Improved shipping should permit import of this larger volume, with consequent effect on sugar-using industries. Probably no immediate effects will be felt by the honey industry because of the tremendous demand for the table use of honey and vastly increased purchase power of the average man.

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"Share your extractor" is in line with the policy of "sharing your ride". This slogan may well be adopted by beginner beekeepers, some of whom have not been able to obtain honey extractors. It would be a neighborly act as well as a patriotic duty to offer to loan your extractor to your neighboring beekeepers. The only objection to the policy would be the danger of scattering bee disease. The question will be raised that the share-the-extractor idea might scatter foulbrood. To forestall this, have boiling water run into the extractor and thoroughly scald it out in order to make it safe. Inquiry should be made along that line. It is necessary **to consult the local bee inspector.** If a territory is clean and the extractor is scalded out by each individual and again by the next user, there should be no scattering of the disease. We are in a great war now and we must do things now that we would not do in peace times.

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Estimated Honey Crop for 1943 The September Honey Report from Washington, D. C., page 620, this issue, is indeed illuminating as well as interesting. Contrary to opinions expressed by some beekeepers recently, the crop for this year is about 191,234,000 pounds, which is about 8 percent larger than the 1942 crop and 13 percent less than the large crop of 1941.

California is the banner state for the amount of honey produced—29,120,000 pounds, about 10,000,000 pounds more than last year. Minnesota ranks second, with 16,800,000 pounds. Some other states that ordinarily produce good crops, experienced unfavorable weather conditions which caused crop shortages.

The weather thus far during September has been cool and unfavorable for bees to harvest a fall crop in goldenrod and aster areas. Should the weather during the next few weeks become suitable for nectar secretion a fair fall crop may be secured.

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Floor Prices for Agricultural Crops In line with the article in the September issue of Gleanings in Bee Culture entitled, "Floor Price Needed For Honey" announcements have come from Washington to the effect that the administration is in general inclined towards a broad scale use of support prices in an effort to get farm production of the kind and quantity needed in 1944.

It is also reported that President Roosevelt invited a number of farm leaders to confer on the question of support prices. Representatives of the National Grange, American Farm Bureau Federation, National Farmers Union, National Council of Farmer Co-operatives, as well as the War Mobilization Director, James F. Byrnes, and Economic Stabilization Director, Fred M. Vincent, War Food Administrator, Marvin Jones, and Secretary of Agriculture Wickard, were invited to the conference.

The support price system already in use on some commodities obligates the Government to guarantee a certain price for a farm product for a specified period of time following the war. If the market falls below that figure the Government buys enough at the agreed price to strengthen the price sufficiently to equal the named floor price.

If a broader use of the support price plan is in the offing, it is hoped that the chances of the Government including honey under this program will be improved. It should be point-

ed out that a floor price on honey would by necessity have to be founded on a different principle than the present ceiling prices established by OPA. In the latter case, the price is an arbitrary figure set by regulation. In the case of a floor, the price would be maintained not by regulations but by Government purchases of excess stocks. It is possible that some disposition of the honey could be made through the school lunch program as was started in the beginning of the war period. This plan should not be expensive to the Government and yet would soften a possibile fall in honey prices at the end of the war period.

The benefit to general agriculture through the pollination function of the bees must be kept foremost in our thinking concerning any aid to the honey industry.

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The Proposed Federal Regulations on What Shall Constitute a Honey Bread not Considered Reasonable nor Necessary

Our readers will recall that a Hearing was held in Washington under the Federal Food, Drug and Cosmetic Act, in August, 1941, to determine how much or how little honey could be used in a bread and call it Honey Bread. Tentatively, it was proposed to require not less than 16% solid by weight or 20% liquid, to 100 parts of flour, as the minimum requirement for such a bread.

Protests at the time were filed from all over the country, from beekeepers, honey packers, and large baking establishments, and particularly from the American Honey Institute, that such a ruling would shut out the use of honey in bread.

A previous survey of the American Bakers' Association as well as the testimony presented at the Hearing, revealed that the bakers had been using from 2% to 9% liquid honey in bread where honey was used exclusively, and from 1% to 8% where honey was used with sugar. Their proposal of a 4% solid honey was four-fold: (1) Moisture absorbing qualities, (2) consumer appeal, (3) fine texture induced by vigorous fermentation, and (4) a rich brown color due to the caramelization of honey in the presence of heat. Nothing is to be gained by using a 16% solid honey except to add excess sweetness, not wanted.

The testimony was so overwhelmingly against the high percentage of honey in bread on the part of the American Honey Institute, beekeepers, housewives, and bakers that it was not believed at the time that the Government would require a percentage of honey that would ruin the honey bread business of the United States and at the same time bring disaster to the beekeeping interests that furnish the darker-colored and stronger-flavored honeys for the baking trade. It has been estimated that something like thirty million pounds of honey go into the baking business.

Two years elapsed without a decision. Finally in the "Federal Register", Washington, D. C., August 3, 1943, appears a report of the Food and Drug Administration to the effect that "there is no demand on the part of the consumer for bread or rolls containing the proportion of honey proposed by the Food and Drug Administration for 16% solid in these products. The evidence does not establish that such a proposed definition and standard of indentity would be reasonable". It is clear from this that F. D. A. will not require such a high percentage of honey in a product labeled Honey Bread. So far, so good. The public is not asking for it and the evidence at the Hearing, August 1941, was so overwhelmingly against a 16% solid that the disaster we feared of complete shut-out of honey from a bread bearing a honey label has been averted. But the report adds that the proposal by the American Bakers' Association that the 16 parts be reduced to four parts would result in products that were not distinguishable by the ordinary consumer from common or honey bread. This leaves us somewhat in doubt. While the F. D. A. will not require a 16%, it may compromise on, say, a 5% solid which R. B. Willson of John G. Paton Co. of New York, says would not be out of reason. He favors a straight honey and no sugar. A 4% solid honey such as is used in the baking trade would show a slight honey flavor. One of the primary reasons for using honey in bread is mechanical, in that a honey bread will keep soft and moist longer than a bread without honey. Again, honey for the baking trade is usually darker and stronger in flavor than a milder flavored light honey used for the table. We fear that the F. D. A. is overlooking that important fact.

XUM

Beekeepers are eligible under a Directive Order No. 28 to purchase internal combustion engines, not to exceed 20 horsepower. This authority to grant preference ratings, under certain conditions, has been granted the War Food Administrator.

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Improvement of Bees The article entitled, "A Suggestion for Improvement of Strain," by C. A. Jamieson, Central Experimental Farm, Ottawa, Canada, appearing in September, 1943, issue of "Western Canada Beekeeper", lists as desirable characteristics, (1) good honey producers, (2) hardiness for wintering, (3) non-swarming, (4) resistance to disease, and (5) gentleness.

The author points out the necessity of rigid selection of stock. However, it is not economical for commercial honey producers to raise many queens, which means taking a number of colonies out of production and using extra and special equipment, not to mention time and labor.

Mr. Jamieson favors selecting queens which show the highest degree of desirable characteristics and sending these queens to a reliable queen breeder who has the facilities, experience, and ability to produce good queens.

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Sweet Clover Being Replaced The acreage of sweet clover, a dry weather plant, has decreased considerably within the past few years, with the return of normal rainfall. A large acreage is being devoted to soybeans and corn. Some commercial beekeepers in what used to be sweet clover areas have been forced to find new locations. Just what the outcome will be is difficult to predict. But one thing seems reasonably sure,—the soil needs legumes, especially sweet clover, to maintain and increase fertility. We need fertile soil to produce the maximum of food to help meet the present food emergency.

It seems likely the "powers that be" may find it necessary to again recommend the use of sweet clover for soil rejuvenation. If this happens, the future of beekeeping in what has been called the sweet-clover areas will be brighter and, incidentally, bees will be absolutely necessary to pollinate clover blossoms for seed production. Each beekeeper should contact his farm bureau agent to encourage propagation of clovers.

Most Important Animal in Winning War Release 177, as of August 1, 1943, entitled, "The Role of Conservation in Wartime", a 24-page bulletin, by Lawrence E. Hicks of the Ohio Wildlife Research Station, Ohio State University, Columbus, Ohio, contains pertinent information which should be brought to the attention of our citizenry, especially farmers, horticulturists, and beekeepers. Following are a few excerpts from this release:

> What is the most important animal in winning the war? We might list the cow, the chicken, the hog, the steer, the horse, the sheep, the homing pigeon, and even white rats and guinea pigs so valuable in medical tests and serums. Most would probably omit the honeybee — a species which properly should rank near the top of the list.
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> "Madam Honeybee" can do much to keep our farms productive for the duration—hence, enable them to do the most for the war effort and avoid undesirable after events. "She" can make it possible for each and every farm to produce its own nitrates by growing clovers and other legumes. As indispensible pollinating agents, honeybees can make possible the production of sufficient legume seed to enable soil-building practices to continue. Ohio studies indicate that sweet clover is the most valuable soil-building legume, but alfalfa and most of the other legumes are nearly as efficient. Bees, through pollination can do much to maintain soil fertility and enable farms to produce their assigned quotas of food and other war supplies. Bees and legumes, through their influence on soil building practices, regulate both water and soil, and modify the existence of all other plants and animals. Likewise, they can,to a great extent determine the economic, social, and cultural progress of the men who live on, or from, the soil which they condition.

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Effect of Recent Manpower Rulings in Bee and Honey Industry As the result of recent Manpower Rulings and the likelihood of the drafting of fathers many questions have arisen in the minds of the members of the beekeeping and honey industry concerning the draft status of those fathers within the 18 to 38 year old range now employed in the industry. The following sums up some of these recent rulings as they affect the industry:

On August 1 the War Manpower Commission issued a list of critical occupations in which the shortages were the greatest and also considerable training time was required. At the same time a list of non-critical occupations was published. This list included, for example, book and periodical agents, bootblacks, bus boys, bar tenders etc. These occupations are non-deferrable. In between the critical occupations and the non-

deferrable occupations come a great number of necessary occupations that are essential to the well being of the country. Among these fall the jobs required in all phases of the bee and honey industry (not already classed as farming) such as those required for the production of equipment necessary for the raising of bees, the sales and servicing of this farm equipment and the processing, bottling, and sale of honey.

In addition to the critical occupations and non-deferrable occupations mentioned above, the War Manpower Commission has also issued a list of essential activities which is concerned with the kind of item manufactured or serviced. These include the production of aircraft as well as all of those items directly related to the prosecution of the war; also the essential civilian activities, such as the manufacture of agricultural equipment, farm repair, and maintenance service, and the packing of honey.

The keeping of bees has for some time been a draft deferrable occupation under requirements of Release No. 175*

While conditions will vary with local draft boards, we believe that on the whole fathers working full time under one of the occupations in the bee and honey industry have an equal chance of draft deferment with those in other essential activities and unless an individual has sufficient training to qualify under one of the super critical occupations no change in occupation should be contemplated.

*See February, 1943, Gleanings, page 97.

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Bee-sting Cure for Arthritis and Rheumatism

Since the death of Dr. Bodog F. Beck, on January 1, 1942 (the man who introduced the bee-sting cure from Austria, requests for information have been increasing at a rapid rate. Dr. Beck was willing to teach medical men the technique of this cure. Up to the beginning of the war there were a number of young medical men in the country who were administering the treatment, for it was, in fact, a treatment—the application of stings by holding live honeybees to the affected parts of the body. All the doctors, with perhaps the exception of two, who were giving this treatment, have since been called into the service. The two are Dr. Raymond L. Carey, 341 North Larchmont Avenue, Los Angeles, California, and Dr. Irving S. Cutter, Chicago, Illinois.

Most sufferers of these ailments—rheumatism, arthritis and neuritis—cannot afford to make a trip across the country, and many have asked how they can apply the treatment themselves. Neither Dr. Beck nor Dr. Carey advocates self-treatment. It is dangerous to have a beekeeper apply the stings adlibitum. To get a sufficient dosage in the beginning might cause serious heart action. Usually one or two stings will not produce much effect.

It has been the rule of these doctors to apply one sting, watch the heart action, and then in a day or two apply another, increasing the number of stings until a patient can take as many as ten stings to the affected part and later increasing them to 50 and 100 at one application.

In self-treatment, call in the family physician and then get some beekeeper to apply one or possibly two stings for the first treatment, watching carefully the heart action. This must be done by a competent physician, and every time stings are applied, he should be present. If, after the sting is applied, there is a general itching all over the body, the application of stings should be discontinued and the doctor should give a stimulant. At no time should enough stings be applied to develop this condition; it is too dangerous.

That certain and definite results were secured by these doctors mentioned above, the writer has no doubt. We have seen 50 and 60 stings applied at one time and in a number of cases we have seen almost immediate beneficial results.

It is only fair to say that where rheumatism or arthritis has been present for years, probably no relief could be secured. Too take enough of the poison to get results would be running altogether too near the danger limit. One man told the writer that he would prefer to die from an overdose of bee stings rather than suffer all of his life with excrutiating pains from rheumatism, to say nothing of the inconvenience of not being able to handle his arms and legs.

If any doctor or anyone wishes to know more about this bee sting cure as advocated by Dr. Bodog F. Beck, they should refer to his book, "Bee Venom Therapy", published by Appleton-Century Co., price $5.00.

Beeswax Needed for War Uses

The War Food Administration urges everyone keeping bees to conserve every ounce of beeswax, as it is essential in the production of numerous war materials.

More than a million pounds of beeswax a year are needed for use in war products—in adhesive tape used for sealing shells—as waterproofing and protective coatings for shells, belts, coils, and machinery, especially when shipped into warm climates where ordinary grease would run off—and as protective coverings for our fighting planes.

Beeswax is not attacked by mildew, and so is more satisfactory for waterproofing canvas than paraffin. Large quantities of beeswax are employed in war work plants for waxing cables and pulleys, in polishes, and in improving insulation. Soldiers and sailors require large amounts of beeswax in connection with dental work. These are only a few of the dozen of ways in which beeswax is essential in the war.

Before Pearl Harbor, the number one use for beeswax was in cosmetics —lipstick, cold creams, rouge, deodorants. The difficulties experienced by manufacturers in obtaining glycerine and other components of cosmetics, have curtailed the quantity of beeswax used in these products.

But sun creams for tropical use are still essential to the war effort, and beeswax is in demand for use in camouflage make-up, and in preparations for the face and hands, needed by Rangers and Commandos, to prevent their being seen by the enemy.

Church candles have ranked as the second most important use of beeswax. Voluntarily, the Catholic Church authorities are cooperating in burning fewer candles, in using candles more fully and with less waste.

With imports of beeswax curtailed (formerly over half our beeswax supplies came from other countries) war industry looks to the American beekeeper to increase our domestic output of beeswax.

How the Beekeeper can Help

At this season of the year the beekeeper can aid by cutting deeper when extracting his honey, and by careful handling of his wax to prevent damage by the bee moth. Deeper cutting, alone, if practiced generally, could produce a million pounds of beeswax, or most of the war needs.

Another million pounds of beeswax that are ordinarily wasted, could be gathered if all beekeepers would save scrapings from the frames, burr combs, and other equipment that are often thrown away by the beekeeper, or burned.

Not only is the wax greatly needed, but burning up or throwing away beeswax worth 41½ cents per pound cash and 43½ cents per pound in trade is an expensive luxury for any beekeeper.

To prevent ravages by the bee moth, discarded combs, scrapings of wax, burr combs and beeswax salvaged from abandoned colonies, if not melted down immediately, should be placed in tight containers and fumigated.

Collecting beeswax is a partriotic job for 4-H clubs and other youth groups. Local salvage committees of the War Production Board also are cooperating in the collection of beeswax scrap.

Beeswax can be sold to hundreds of local agents of bee supply firms, or direct to a substantial number of large buyers. The Food Distribution Administration, Department of Agriculture, Washington, D. C., can furnish the names of such buyers, or they can be obtained from State apiarists, county agents, or secretaries of beekeepers' associations. — Food Distribution Administration, 5 S. Wabash Ave., Chicago 3, Ill., Sept. 7, 1943.—U. S. Dept. of Agriculture, Washington, D. C.

BEEKEEPERS' SHORT COURSE

The Correspondence Study Department of the General Extension Division of the University of Minnesota and the Agriculture Short Course of the University of Minnesota jointly announce a correspondence course and short course in Beekeeping to be given by Dr. M. C. Tanquary of the College of Agriculture of the University of Minnesota.

For further information about this course write to Mr. James S. Lombard, Head, Correspondence Study Department, University of Minnesota, Minneapolis, Minnesota or to Dr. J. O. Christianson, Director of Short Courses, University Farm, St. Paul, Minnesota.—J. O Christianson, Director.

Just News

The Cuyahoga County Beekeepers' fall meeting will be held at 2:00 p.m., Sunday afternoon, October 10, in Carnegie Hall, 1220 Huron Road, Cleveland, Ohio. While this will be an open discussion meeting centering around the methods of packing and wintering bees, any question or problem in beekeeping will gladly be taken up. It has been said that there are as many ways of wintering bees as there are beekeepers. So come early and throw your two cents into the pile. We intend to stop all fights, however, before anyone gets seriously hurt. As always, everyone is invited.—Ed Johnson, Sec'y.

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The Sioux City Association members, at a meeting held July 21, pledged $10,000 for the following year to the American Honey Institute. This Association is to be congratulated on such a generous gift which will help to further the splendid work done by the Institute.

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The New Rochelle Beekeepers' Association will hold their regular monthly meeting at the home of Mr. and Mrs. A. W. Joslin, 209 Oakland Beach Avenue, Rye, N. Y., on Sunday October 17, 1943 at 2:30 P. M. A review of the past summer's successes and problems will be open for discussion.—S. Barnes.

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W. H. Purser, formerly of Alabama, has been appointed Assistant Bee Specialist in charge of bee inspection work for South Carolina and some research work at Clemson Agricultural College. Mr. Purser has just finished a course on beekeeping at Ames, Iowa, and he is well qualified to do this work.

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The Middlesex County Beekeepers' Association will rally at 19 Everett St., Concord, Mass. on Saturday, October 30th at 7 P. M. for a Halloween Festival and beekeeping symposium. The delicious supper which is being arranged by our excellent Ladies' Auxilliary, with an eye to the ration points, will include coffee and plenty of new comb honey with hot biscuits. We hope to have with us Prof. Milo R. Bacon of the Norfolk Agricultural School, who has been doing some fine inspection work this summer in Middlesex and neighboring counties.—A. M. Southwick, Pres.

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The Illinois State Beekeepers' Convention is scheduled for November 12 and 13, at St. Nicholas Hotel, Springfield, Ills.

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The Alabama beekeepers will hold their annual Association Meeting at the Jefferson Davis Hotel in Montgomery on Friday, Oct. 29, All beekeepers are urged to attend.—Eugene D. Cutts, State Apiarist.

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"Beekeeping for Profit and Pleasure", by Addison Webb. This is a new beginners' bee book, charmingly written, interesting and instructive. The book is attractive in appearance, with coarse type and line illustrations. Magazine readers, especially suburbanites, will welcome such a book. It is accurate from the standpoint of the bee behavior for modern practice, and no wonder, because Mr. Webb is not only familiar with the bee literature of the country, but has kept bees both in the city and town. He starts off with a description of the inmates of the hives, as well as the house in which they live. He not only tells how to produce honey and beeswax, now so necessary for war munitions, but how bees are able to increase the food crop through their work in pollinating blossoms. There are some things which appear in this book that are not given elsewhere. For instance, he furnishes a list of honey and pollen plants with a schedule showing their distribution and their season for nectar and pollen. This is not given in any other bee book. The price is $2.00. It is published by the MacMillan, Co. New York City.

SUGAR TO SAVE BEES

Beekeepers who are facing loss of their bees because of lack of sufficient natural food, may obtain additional sugar allotments if they are registered with OPA as industrial users. The supplemental allotment is limited to a maximum of 15 pounds per bee colony per year. Applications should be made in person or by mail to the local rationing board.—Office of War Information, Sept. 22, 1943.

XUM

Asked and Answered

Keeping Bees Away from Raw Sugar

Question.—A supply of raw sugar has come in and bees from every hive seem to have located it. I wish to know how these bees can be repelled without any harm to them.—Alexander H. Bell, Florida.

Answer.—It seems apparent that there must be a dearth of nectar there. Bees would not visit the raw sugar if nectar was available. It may be difficult, perhaps impossible, to prevent the bees from visiting the supply of raw sugar. Here at Medina years ago, our bees used to visit candy booths at the fall fair. The owners of the booths put up quite a kick because of the bees around the booths which had a tendency to keep customers away. A few days prior to the fair, we would do outdoor feeding. We fed sugar syrup, about three parts water to one part sugar, in open feeders in order to divert the bees away from the candy booths to the syrup feeders. This did the work. You might try it. You could put the sugar syrup in long troughs, similar in construction to hog troughs. A few pieces of wood, placed in the syrup to prevent the bees from drowning, might be necessary.

Killing Bees in Fall and Starting from Packages Next Spring

Question. — Much controversy prevails over the relative merits of wintering bees vs. the practice of killing them in the fall and replacing with spring packages. Last winter — which was very severe — I lost around 25% of my colonies. Without exception, these were the weakest colonies when I put them away, and they died despite the fact that I had reinforced them with additional stores. The net result was that I lost both colonies and stores, for the other hives robbed the dead ones before spring. Could you enlighten me on the accepted way of killing bees in the fall and taking off the entire amount of honey stored in the hive? I rather think that such a course should not be followed until all brood-rearing has ceased, or at least should not be done without caging the queen some weeks ahead. In that case, how about laying workers filling the comb with drone brood?—James Mott, Hallowell, Mass.

Answer.—Some beekeepers in the far North practice this method. It appears to have some advantages in regions where wintering bees is very difficult. One beekeeper in northern Michigan has practiced it for a number of years. He removes queens about the first week in August, then places a queen excluder directly over the bottom board underneath each brood chamber to prevent virgins from mating. Late in the fall he kills colonies with Cyanogas. About a tablespoonful of this powder thrown into the hive entrance will kill the colony in less than a quarter of a minute. It is a very powerful chemical and needs to be used with extreme care. The hives are cleaned out, that is, the dead bees are removed and then hives are stored in a mouse - proof building during the winter months. In the spring, the hives are placed on their summer stands in readiness for packages of bees. There is considerable work connected with this method. Also there is some worry in connection with getting package bees in the spring when needed. Packages need to be contracted for in advance of the time needed.

Removing Combs that are Not All Capped Over

Question.—I have two supers of honey that are only about one-half capped over. I would like to extract it but would like to know if this is advisable. It has been like this for almost two weeks.—H. B. Waefler, Ohio.

Answer.—It would seem advisable to extract the honey out of the combs especially if the bees are not storing much surplus at the present time. While the books say to uncap only combs that are at least three-quarters capped over, it is a fact that under some conditions bees do not cap combs thoroughly. This isn't saying that the honey in the combs is not well cured. If such uncapped honey has been on the hive for a time and if the weather is reasonably dry, such honey is likely to be thick enough in body so that it will not ferment after being thrown out of the combs by an extractor. The bees have driven off the excess moisture from the nectar and have resolved it down to the consistency of honey. Occasionally, the honey flow shuts off suddenly and the bees, not having the stimulus of a honey flow to cause them to secrete wax do not have the wax available for capping over the honey. Possibly this is what has happened in your case. If there is any buckwheat or dark colored honey in your locality, this would be another reason for getting your white honey off the hive and extracted before the dark honey begins to come.

Late Fall Honey Ferments

Question.—Our late fall honey from wild flowers sours and boils up. It did this a

number of times. What is the reason?—Mrs. Henry Raymark, Wisconsin.

Answer.—It seems likely that cool weather, following your late fall honey flow, may prevent bees from properly curing the honey by driving the excess moisture out of the nectar. If warm weather follows a late flow you should not be troubled with honey souring. If cold weather follows the flow there isn't much you can do about it. Fall honey that sours or ferments, due to an excessive water content, should be heated before marketing it. To do this, the cans of honey should be placed in a wash boiler with hot water, over a gas plate. The honey should be brought to a temperature of 160° Fahrenheit and left at that temperature for at least fifteen minutes, then cooled. This heating drives off excessive moisture from the honey, in fact, it does what bees were not able to do during late fall because of abnormal weather conditions.

Combining Two Weak Colonies

Question.—What is the proper procedure to combine two weak colonies?—W. M. Porter, Ohio.

Answer.—To unite two weak colonies, the hive containing one colony should have its bottom board removed, and the hive containing the other colony should have the hive cover removed. Set the hive without bottom on top of the hive without cover, placing one thickness of newspaper between the two hives and punching a few small holes in the paper with a pencil to admit air into the top hive. In a few days the bees will gnaw the paper away and the two colonies will unite. One of the queens will be retained and the other will be disposed of.

Filling Honey Containers

Question.—If honey is packed in standard containers, such as five and ten pound glass jars, must the honey be weighed to assure that it has sufficient weight; or will properly ripened honey always have the correct weight if the container is filled to the top? Must the exact weight be placed on the jar even if it exceeds the net weight as stated on the label and for which it is sold?—Theodore J. Kasper, Wisconsin.

Answer. — Concerning honey in standard glass containers, these are made to hold certain amounts of honey of the proper density with enough extra space left for possible expansion. Glass honey containers should not be filled brimful because the honey, if placed in a warm room, will naturally expand and break the containers. It is well to weigh the required amount of honey into the honey container.

Beeswax Secured from Cappings

Question.—What is the average number of pounds of clean well rendered wax per 1000 pounds of extracted honey?—J. N. Anderson, Texas.

Answer.—We have found from years of experience that the amount is between 1½ and 2 pounds of wax for each 100 pounds of honey. If you discard worthless combs and use eight combs for each 10-frame super, instead of nine the amount should be almost 2 pounds of wax for each 100 pounds of honey extracted. During a good year, when the combs are well capped, there would naturally be more wax than during a year when combs are not well capped over.

Strengthening Weak Colony

Question.—How can I strengthen a hive of bees at this time of the year?—Herman Paige, Delaware.

Answer.—It is sometimes possible to strengthen a weak colony by shaking combs of bees, taken from strong colonies in the same apiary in front of the hive containing the weak colony. If there is no honey flow on, it seems advisable to cage the queen in the weak colony, by placing her in a cage with a little candy in the end of the cage. Some of the strange bees from other colonies might attempt to kill her. When bees from other colonies are shaken in front of the hive, the old bees will, of course, return to the hives from which they were taken but the young bees, being unable to fly, will walk into the hive being strengthened.

Painting Rusty Honey Extractor

Question.—We have a honey extractor that has been exposed too much to the weather and is quite rusty. What is the best kind of lacquer or paint that could be used to coat the inside of the machine, so we can still use it for honey?—Sam Jones, Ontario.

Answer.—You should, first of all, sandpaper the rusty parts thoroughly, then apply a lead proof enamel paint. Some beekeepers leave their honey extractors wet with honey all winter instead of washing them after extracting is done. The coat of honey has a tendency to preserve the interior of an extractor. It would be necessary, of course, to wash the extractor thoroughly the following season, at the beginning of the extracting season.

Nine Frames in the Brood Chamber

Question.—Would it be all right if I use nine frames instead of ten in the brood chamber of the hives? Some apiarists up here use only nine frames, and I wondered if it works all right.—Max Javosch, Wisc.

Answer. — Some beekeepers use

(Continued on page 630)

Talks to Beekeepers

M. J. Deyell

Bird'seye View of Beekeeping

Most of us are likely to be rather local in our thinking and our outlook on beekeeping as an industry.

Some readers may not realize that Gleanings is read by beekeepers in nearly every country of the world. One of the joys connected with my work is to receive letters from beekeepers in Africa, Australia, New Zealand, Great Britain, and most of the countries in Europe. I heard recently from beekeepers in South America and what they said makes me want to see for myself what bees will do in the way of producing surplus honey in those countries.

I have wished, more than once, that I could have some beekeeping experience in various sections of this and other countries. As a matter of fact, I have worked with bees in only three states, Ohio, Michigan, and Florida.

I have found from experience that the type of management that works in one locality may have to be revised for other localities or sections of the country.

Beekeepers here in the North are concerned about wintering bees successfully. Beekeepers "down under", as for example New Zealand and Australia, are approaching spring and during October their bees are collecting early pollen.

As I have said more than once, Gleanings endeavors to emphasize beekeeping principles rather than specific methods of apiary management.

It is up to beekeepers in various parts of the world to acquire a thorough grasp of the fundamental principles that underly success in beekeeping, then apply these principles.

In most of the southern states, such as southern California, Texas, Louisiana, and Florida, bees collect pollen and some nectar during most of the winter months.

It is necessary, however, for beekeepers in Southern states to reserve an adequate supply of honey for stores during the so-called inactive months of the year. Many beekeepers in California and Florida, where the orange honey flow occurs quite early in the spring, secure good crops of surplus honey, when conditions are favorable, by allowing an ample amount of honey for each colony late in the fall. Colonies thus provided with an abundance of stores build up rapidly to normal honey-gathering strength, whereas, colonies allowed to go through the winter on starvation rations build up on the early flow instead of for it. As a matter of fact, the same thing applies to beekeepers in the North.

Man is the Bees' Worst Enemy

Someone has made the above statement which seems to be true. For example, disease is spread oftentimes as the result of faulty or unwise hive manipulation, switching combs from one hive to another. Poor wintering is caused in many instances by the owner of the bees removing too much honey from the hives and thus permitting the colonies to run along on short rations.

Some beekeepers tinker with their colonies too much. They may change the arrangement of combs in the brood chamber rather late in the fall after the bees have placed honey and pollen where it is needed during the long winter months. It is a mistake, in my opinion, to change the arrangement of combs late in the season, especially in cold climates, unless, perchance, such changing seems absolutely necessary. Colonies of bees, if given a chance, and an ample supply of food, will do a pretty good job of arranging it to their liking, late in the season in preparation for winter and early spring food requirements.

Those of you who read the first article in September, 1943, Gleanings by C. L. Farrar will perhaps recall two statements he made; first, "The basic problem is not how or where bees are wintered but what kind of colonies are wintered;" sec-

ond, "Honey converted into bees will bring a higher price than honey sold on the market, because those bees contribute to a much larger yield."

Extra Honey in Hive is Good Bee Insurance

These two statements are certainly worthy of careful consideration. Some beekeepers who have lost bees during the winter may blame that loss on lack of insulation of packing around hives, when, and as a matter of fact, it may have been and doubtless was due to the colonies not being in prime condition for winter. Each colony should be very populous with a super-abundance of good quality stores properly placed.

With the strong demand for honey at the present time, it would not be surprising if history would repeat itself, which means that some beekeepers will be tempted to take too much honey from the bees and thus allow them to starve during the winter. Such practice is shortsighted economy. Normal colonies of bees do need an ample amount of food—honey and pollen—during the winter and early spring months. Fifty or sixty pounds of honey and the equivalent of four or five combs of pollen is none too much, especially for the North. One thing is sure, if the bees do not need the honey, they will not consume it and the **presence of extra honey in the hive is good bee insurance.**

The Food-chamber Hive

Most beekeepers use this type of hive. This means wintering each colony in a two-story hive, the upper chamber being filled with honey in addition to some honey in the lower chamber.

It is very necessary that the upper chamber be well filled so that the bees may not run short on food during the winter. Those who winter bees in bee cellars may use single-story hives, which are more easily handled and occupy less space in cellars. Beekeepers in the very far North find cellar wintering more satisfactory than outdoor wintering, because bees in those regions are confined to hives during long periods of cold weather. The temperature in a cellar can be controlled to a certain extent, whereas the outside temperature is beyond control. A cellar temperature ranging between 40° and 50° Fahrenheit seems suitable for bees. Some report good wintering at a temperature slightly below 40° Fahrenheit. The section of the country appears to have something to do with the cellar temperature required. The first article in this issue by Percy Wright throws some light on this matter.

Even though bees are wintered in cellars, in single-story hives, it seems sensible to have honey reserved for each colony, put aside in extra supers, to place on colonies after they are removed from the cellar and placed on summer stands early in the spring.

A Foolish Mistake

I have to smile when I think of some of the foolish things I have done in the past. While producing honey commercially in northern Michigan in 1917 and 1918 I well recall removing combs of honey from 8-frame single-story brood chambers, during August in order to increase the amount of surplus raspberry honey secured that season. I supposed the colonies would fill the brood chambers with fall honey — which they didn't. It was necessary to feed the colonies later in the fall before they were put into a bee cellar and after they were removed from the cellar the following spring.

In that area of Michigan, just south of Traverse City, there is, or perhaps I should say, there was at that time an abundance of early bloom, such as dandelion and pin cherry. I realize now that if I had applied intelligent apiary management to those bees I perhaps would have secured some

A two-story colony packed with four or five inches of fine straw under asphalt paper, the packing extending to the ground.

surplus from the spring honey flow, not to mention a larger surplus from raspberry, milkweed, and other sources later on.

When Syrup Feeding is Necessary

If, due to unusual abnormal weather conditions in some regions, foodchambers have little if any honey at the close of the season, it may be necessary to remove empty combs and keep enough combs containing some honey to winter each colony in a single-story hive. An inside feeder may be used, such as a divisionboard feeder, if available. When feeding syrup, nothing but pure granulated sugar should be used. Directions for securing sugar will be found on page 606 this issue.

Pack Where Necessary

The picture on previous page shows a packed hive with insulation applied, about five inches of fine wheat or oat straw, under asphalt paper.

Some beekeepers use a permanently packed hive like the Buckeye hive. Others use wooden packing cases that fit over hives, with space left for packing material. A tunnel is made from the hive entrance to the outside. Extension men in bee culture in various states and provinces should be able to supply information on the amount of packing needed.

Moisture Within Hives

It appears advantageous to provide an upper entrance or flight hole for each hive in addition to the restricted lower entrance about 4" x ⅜" to exclude mice. Some place the upper opening at the top of the hive and others have it about the center of the upper brood chamber, or food chamber. Further experimental work needs to be done to determine how and where this upper opening should occur. This upper opening, when it occurs in the center of the upper brood chamber, permits bees to fly out easily during warm days of winter, because the opening is practically adjacent to the winter cluster. It also helps to expell excess moisture from the hive and is insurance against suffocation due to possible clogging of the lower entrance with dead bees or ice.

Wind Protection

Bees wintered outdoors in a cold climate should have protection against prevailing winter winds. A row of low growing shrubs, planted rather close together furnishes excellent wind protection. It is advisable, in the absence of natural protection, such as shrubs or buildings, to erect a fence about six or eight feet high, with boards spaced about one inch apart similar to snow fences found along railroads, to break the force of winter winds. Wind protection is important, even though hives are well insulated.

Importance of Air Drainage

Colonies of bees in low places, do not, as a rule, winter well even though they are surrounded by trees. Poor wintering in such a location, may be, and doubtless is, due to poor air drainage. Air caught in a pocket does not circulate so freely as it would on the side of a hill. It would seem preferable, when selecting an apiary sight, to pick one where the air moves easily from a high to a low level.

An artificial windbreak. The force of the wind is broken by the openings between the boards of the fence.

Spinster Jane Says

[The following was received too late to appear in the September issue of Gleanings. Here's hoping for a speedy recovery.—Ed.]

Hospital Life

And another month, one of the very busiest bee months, too. Spinster Jane has been saying nothing except talking back to nurses and doctors from a hospital bed.

It all seems too simple to be true. I thought I had developed a little good horse sense but I am a little skeptical of even that now. If you can fancy a woman forgetful enough to open a door into an open cellarway (without steps) and pitch off into space after being warned the cover was open,—well, that's just what I did. It was only a drop of eight or nine feet, but what it did to me!

They got me together and headed for the Red Cross Hospital near at hand where I was left to be examined, patched up, and mended as best possible. I had a broken collar bone, two broken ribs, and numerous cuts and bruises, but I didn't think one small body could have so many aches and pains. The medicos shook their heads over my age (70), and said I should not look for a quick recovery, so here I have been ever since—a period of five weeks on Wednesday, August 18, and the result, a steady increase in strength, no appetite worth mentioning, an insatiable thirst, and a cantankerous disposition. But this latter in no way intimidates my doctors and nurses for they inform me that this be a certain sign that I am well on the road to recovery.

During my bed-ridden state I have certainly not had much time to be lonesome as neighbors and honey customers from all over the vicinity have flocked in to see me, and, like the Greeks, bearing gifts till my room was a veritable flower garden and I can never hope to do away with the fruit and candy received.

And of the people who call to see me, the greater part are most interested in seeing just how big a number of pounds of honey they can wangle. This, although dozens of others have had their orders in for nearly a year. And, I am ashamed to own it, the women are worse than the men. The fruit sugar asked for proves this and now in this honey season they seem to think Jane can bring pressure upon honeybees to get them just a little more of the precious sweet. Years ago, buyers of a four-pound pail thought they had bought the limit. To-day they ask, 50, 75, or 100 pounds, and may the other fellow go to blazes.

Must Requeen

One thing we have pretty well proved. We really need to requeen our entire yard. One of our best colonies a year ago was too ugly for words—now this ugliness has spread and grown to too great an extent. When one cannot go near the yard without receiving several stings, well it is high time for one to change things a bit. We liked Italians and their color but Honey Boy believes he will try the tamer Caucasians another year. Should they live up to their reputation and we succeed with them, the rejoicing of our neighbors will know no bounds.

At extracting time, the bees are naturally very ugly. They are suspicious of everything, human and otherwise. They have been robbed of their summer's work, and maddened with the injustice of it all vent their rage on the customers who venture to the honey house to place their orders with Honey Boy. And it is a rare sight indeed to see a great grown man bolt from the honey house and go dashing across the yard, arms flailing wildly, to the sanctuary of his car as if pursued by devils, which I think is an apt comparison with the bees at this particular time. Perhaps my sense of humor is a little warped but I still laugh and tell them to try the old-fashioned remedy of a mud application or that a bit of bluing would just about do the trick. So I repeat that the arrival of the Caucasion Bee in our bee yard would be very welcome and as for their gentleness, well, seeing is believing anyway, in as far as the neighbors are concerned.—Spinster Jane.

THE COVER PAGE

An open-air swarm which may or may not survive the winter. The picture is one of Mr. G. A. Pauli's.

September Honey Report

United States Department of Agriculture, Bureau of Agricultural Economics, Washington, D. C. September 14, 1943

About 191,234,000 pounds of honey will be produced in the United States in 1943, judging by returns from honey producers reporting to the U. S. Department of Agriculture on August 20. Allowance for the expected late summer and fall honey flow is included in this estimate of total production.

Honey on hand August 20 for sale amounted to 34,985,000 pounds, or approximately 18 percent of the estimated total crop. These stocks include honey for retail sale and local use as well as that for disposal wholesale for shipment. The reports show smaller stocks this year than last but these figures are not entirely comparable. This year they do not include any of the honey still on the hive, while last year some such honey was probably included. Also, 1943 data are lacking for Florida and Georgia.

Although the present indicated crop is about 8 percent larger than the poor crop of 1942, it is about 13 percent less than the record large crop in 1941, when the number of colonies of bees was about 9 percent less than this year.

The number of colonies this year is 4,901,000 or practically the same as last year. Efforts to increase the number of producing units failed, owing to the poor honey crop last year which resulted in heavy winter losses of colonies, due to shortage and poor quality of winter stores of feed. The wet late spring this year was unfavorable for brood rearing and prevented colonies from building up to normal strength before the main nectar flow. The supply of package bees from the South was late and far short of demand. These bad early conditions, followed by summer droughts in large portions of the country were responsible for the below average yield of about 39 pounds per colony this year. Similar but worse conditions in 1942 resulted in a yield of only 36.3 pounds. In the favorable year of 1941 the yield was 50 pounds per colony.

Of this year's expected total honey crop, 76,605,000 pounds or 40 percent will be produced in the North Central States, 59,895,000 pounds or 31 percent in the Far West, 37,199,000 pounds or 20 percent in the South, and 17,571,000 pounds or 9 percent in the North Atlantic States.

The States of largest production this year with their indicated crops in the nearest round millions of pounds will be, California with 29 million, Minnesota with 17 million, Iowa and Wisconsin with 10 million, New York and Ohio with 9 million, Florida and Michigan with 8 million, Idaho and Texas with 7 million, Pennsylvania and Arizona with 6 million, Indiana, Nebraska, and Colorado with 5 million each. These 15 States together will produce about 141 million pounds of honey or 74 percent of the total United States crop, while California alone will supply about 15 percent of the total.

The trend of production changes in the different areas and States show much variation. Production is larger than last year in the North Atlantic, East North Central, South Central, and Far Western States, but smaller in the West North Central and South Atlantic.

The Western group of States record the greatest gain, 6,599,000 pounds over last year's crop of 53,260,000 pounds. California, with half of the total production in that area, has produced in terms of the nearest round million, about 10 million pounds more honey than last year, but the Rocky Mountain States about 3 million less.

The North Central States east of the Mississippi River recorded a gain of 5,131,000 pounds over the 1942 crop of 30,845,000 pounds. Gains are shown of about 2 million pounds each in Ohio and Wisconsin and over a million in Indiana but a loss of almost a million in Illinois.

In the South Central group a gain of 4,607,000 pounds over the 1942 crop of 14,159,000 pounds is shown. Texas, with 40 percent of the area's production, has about 2 million pounds more than last year with less than a million increase each in Oklahoma, Alabama and Tennessee.

In the North Atlantic group of States, a gain of about 2 million pounds is shown over the total of 15,813,000 pounds last year. Pennsylvania alone makes a gain of more than that amount while New York has about a million less than in 1942.

(Continued on page 625)

HONEY

Food Distribution Order No. 47 and 47-1 Questions and Answers

1. Q. What is the purpose of this Order?

A. The purpose of the Order is to permit the great bulk of the honey crop to be packed by beekeepers or commercial packers and thus find its way into the home. In furtherance of this purpose, the Order definitely restricts the amount of honey that can be used in the manufacture of food products.

2. Q. Why was the Order established?

A. When stocks of sugar became scarce late in 1941, many previous non-users of honey, such as soft drink bottlers, ice cream manufacturers, and many bakers, turned to honey as a substitute for sugar. Existing stocks of honey dwindled rapidly and beekeepers, honey packers, and manufacturers of bee supplies appealed to the War Production Board for a limitation order to conserve supplies of honey for home use. This appeal was granted.

3. Q. How long has the Order been in operation?

A. The initial limitation order was issued by the War Production Board, effective March 26, 1942. It was amended slightly by WPB on June 18, 1942. After the War Production Board activities relating to honey were transferred to the Department of Agriculture, the Order was reissued by the Department with little change in wording as FDO 47 and 47-1, effective April 6, 1943.

4. Q. How much honey does the Order permit an individual or firm to use?

A. During the 3-month period ending June 30, 1943, and during each subsequent 3-month period until the Order is changed, no person may use in manufacturing other products more than 600 pounds of honey or 120 percent of the amount used by him during the corresponding 3-month period of 1941, whichever is greater. This restriction applies only to the use of honey in other products and does not in any way restrict the amount of honey that a packer may buy or sell, or the amount of packaged honey that may be bought or sold by wholesalers, retailers, restaurants, etc., or by individuals.

5. Q. Are special quotas of honey available for the armed forces or other Government agencies?

A. Without affecting his quota any person may use any amount of honey in manufacturing other products to be delivered to or for the Army, Navy, Marine Corps, or Coast Guard, or any person or organization designated by the Director of Food Distribution, or any agency of the United States Government for Lend-Lease purposes, as long as the use of honey is required by the purchaser's specifications or as long as honey is normally used as an ingredient in the manufacturer's products.

6. Q. A baker has developed a new food product involving the use of honey as an ingredient, but he has no previous history as a purchaser of honey. Under the Order he is permitted 200 pounds of honey a month, but this will be entirely inadequate for his needs. Is there any way he can obtain more than this amount?

A. If he will certify his intention to continue to use honey in his formula even after sugar becomes plentiful, he may request a special quota of honey covering the amount he actually expects to use. This should be submitted on Form FDO 47-1, which can be obtained from the Director of Food Distribution, War Food Administration, Washington 25, D. C. Upon receipt of the form, properly filled out, permission may be granted him to obtain the quantity of honey he expects to need.

7. Q. Are the provisions of this Order restricted to domestic honey?

A. No, the intent of the Order is to cover imported honey as well as domestic. Any baker or other manufacturer who purchases, without authorization, imported honey in excess of his quota allotment is violating the provisions of the Order the same as if he had acquired more domestic honey than he was entitled to.

8. Q. Does the Order require any special records or reports?

A. Every person, other than those exempted because of supplying honey to a Government agency, who purchases during any one month 10,000 pounds or more of honey for use in manufacturing other products must report such purchases within 10 days after the close of the month by letter to the Director of Food Distribution, War Food Administration, Washington 25, D. C., specifying the seller, the amount purchased, and the intended use of the honey.

The Order also requires that every person subject to the Order shall maintain such records for at least 2 years, and shall file such reports as the Director may request; but so far

(Continued on page 631)

American Honey Institute News Notes

Commercial State Bank Bldg., Madison, Wisc.

National Honey Week will be celebrated the last week of October.

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An attractive six-page leaflet in a patriotic design is now ready for distribution for National Honey Week. A sample of the leaflet is being sent to all members. If you did not receive one and would like to distribute a few to your customers, you may secure them by writing to the American Honey Institute, Commercial State Bank Building, Madison, Wisconsin. The price is 60c per hundred.

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The American Honey Institute plans to close its books for the year 1943 on December 31. We want your name listed in the Annual Directory and know that you will cooperate with us. We thank you!

• • •

Now is the time to distribute the leaflets, "Use Honey in Canning and Preserving", and the lunchbox leaflet, "Fortified with Honey".

• • •

On page 95 of the August 21st issue of the SATURDAY EVENING POST is a half-page advertisement in colors. The mother is telling her two sons, "Wake up, Soldiers. Report for Chow!" Spam 'n' Eggs - Biscuits 'n' Honey—Wow! Below the picture of the plate with this breakfast of Spam 'n' Eggs - Biscuits 'n' Honey is the caption, "Golden honey on piping hot biscuits". Spam is put out by Hormel.

You will see this same advertisement in the September issue of LADIES' HOME JOURNAL on page 118.

• • •

In the same issue of LADIES' HOME JOURNAL Swans Down Cake Flour has a half-page colored advertisement. In it we see "Luscious Honey Spice Cake - tender - moist - fruity. The recipe's in the new Swans Down booklet!"

• • •

Better Homes and Gardens - pages 36 and 37 of the August issue - shows a picture and recipe for onions and one for carrots glazed with honey.

The September issue of BETTER HOMES AND GARDENS has a colored picture of Luscious Honey Spice Cake. On the back cover of this same issue SPAM'S full-page advertisement mentions "Spam 'n' Eggs, hot biscuits and honey".

• • •

American Cookery Magazine - September issue - appeared in a new dress and under new management. It is full of good material from cover to cover. On page 39 will be found a recipe for Honey Apple Butter and on page 42 one for Honey Walnut Ice Cream.

• • •

On page 41 of the September issue of AMERICAN COOKERY MAGAZINE will be found a recipe for Carrot Cookies published by Arm and Hammer Baking Soda. This recipe calls for ¾ cup Honey.

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On August 24th the Director of the **American Honey Institute** attended a joint meeting of the "Food Fights for Freedom" program sponsored by the Office of War Information, the War Food Administration, the Office of Price Administration, and the War Advertising Council. The meeting was held at the Blackstone Hotel, Chicago, and so many representatives of advertising agencies and food firms attended this meeting that many had to stand.

• • •

A recent visitor to the American Honey Institute offices was Miss Pauline Blennerhassett of St. Albans, Vermont.

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HONEY ORANGE GINGERBREAD

One-half cup shortening, ½ cup brown sugar, 2 eggs, well beaten, ½ cup orange juice, ½ cup honey, 1½ cups flour, ½ teaspoon salt, 1 teaspoon baking powder, ½ teaspoon soda, 1 teaspoon cinnamon, ½ teaspoon allspice, and ¾ teaspoon ginger.

Cream the shortening with the brown sugar. Add eggs and mix thoroughly. Heat orange juice and stir in the honey. Add to the creamed mixture. Sift flour, measure, and sift with salt, baking powder, soda, and spices. Add to the first mixture and beat until smooth. Pour into well greased pan. Bake in moderate oven, 350 degrees F., for about 25 minutes.—Mrs. Benj. Nielsen, Aurora, Nebr.

Buy and Sell Here

CLASSIFIED ADS

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HONEY FOR SALE

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fair-Field Honey Company, Millersport, Ohio.

HONEY WANTED—State kind, quality, amount. Ellsworth Meineke, Arlington Heights, Ill.

WANTED—White and amber honey; any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED TO BUY, comb, chunk, and extracted honey, any amount. Lose Bros., 206 E. Jefferson, Louisville, Ky.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best prices. Cloverdale Apiaries, F. M. Babcock, Fredonia, N. Y.

CEILING price paid for Michigan clover honey, in sixty-pound cans. TOWNSEND SALES COMPANY, E. D. Townsend, Northstar, Michigan.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

WANTED—White or light amber extracted honey, truck lots to a carload. Send sample with price offered. Bee-Kist Products Co., San Antonio, Texas.

WANTED—White clover and light amber honey. Any amount. Cash at time of delivery. Clover Blossom Honey Co., 975 Berkley Road, Columbus, Ohio.

HONEY WANTED—All Grades and Varieties. Highest Cash Price Paid. Mail Sample. State Quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, Calif.

HONEY WANTED—Buying all grades. Clover, light amber, basswood, raspberry; also southern honey, palmetto, orange, tupelo, gallberry. Will furnish cans and shipping cases if needed. J. Wolosevich, 6315 So. Damen Ave., Chicago, Illinois.

WANTED—Honey and beeswax. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

WANTED white or light amber extracted honey from 1000 lbs. to a carload. Cash waiting. Send samples and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

HONEY AND WAX WANTED. All grades. Any quantity. Send samples and your best cash price. We carry large stock of Tin and Glass honey containers. ALEXANDER COMPANY, 819 Reynolds Rd., TOLEDO, OHIO.

FOR SALE

45 ten-frame single-story factory made winter packing cases. Tinari's Apiaries, Bethayres, Pa.

QUEENBEE PAINTING outfits, $1.00; hive cards, 10-15c, postpaid. Southwick Apiaries, Waban, Massachusetts.

YOUR WAX worked into quality medium brood foundation for 16c a lb.; 100 lbs., $12.00. Fred Peterson, Alden, Iowa.

COMB FOUNDATION at money-saving prices. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

FOR SALE—1000 cases used 60's, just emptied. Good condition, at 50 cents. Comb and extracted honey wanted. Bizzy Bee Ranch, North Abington, Mass.

FOR SALE—125 comb honey supers, well painted, filled with new beeway sections and full sheets of foundation. Free from disease, $1.65 each. Chas. B. Hatton, Rt. 2, Andover, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

GET YOUR DRAWINGS and construction detail NOW for proven trade BRADSHAW DEMOUNTABLE UNCAPPING PRESS. No more headaches, simple to build yourself. Won't rust out, last lifetime. Producers report it greatest improvement fifty years. No heat required, will not darken honey. Adaptable any size outfit. Send $2.00 today for PLANS to Bradshaw & Sons, Wendell, Idaho.

HONEY WANTED
Carloads and less, all grades.
Will pay top prices.
Would contract now for crop.
Also Beeswax.
H. & S. HONEY & WAX COMPANY, Inc.
265 Greenwich Street, New York, N. Y.

HONEY WANTED
White and light amber.
Any amount. Top price paid.
BA-BEE BRAND FOODS
740 No. Washington
MINNEAPOLIS, MINN.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

CASH BUYERS OF HONEY
Carload or Less
B-Z-B Honey Company
Alhambra, Calif.
(Los Angeles County)

WANTED
All Grades
HONEY
and BEESWAX
We pay the top ceiling prices and you get ALL YOUR MONEY IMMEDIATELY. Get in touch with us before you sell. Cans furnished if you want them.
Edward T. Cary
Midland Ave. and Tallman St.
SYRACUSE, NEW YORK
Packers and distributors of
HONEY since 1925

BEES AND QUEENS FOR SALE

GOLDEN ITALIAN QUEENS, select, $1.00 each, rest of season. W. O. Curtis, Graham, N. C.

BRIGHT ITALIAN AMERICAN QUEENS, 75c each, any number. D. W. HOWELL, Shellman, Georgia.

CAUCASIANS — Untested queens, .75c each. Safe arrival. Prompt shipment. Lewis & Tillery Bee Co., Greenville, Ala.

PACKAGE BEES and queens. Italian stock. Dependable service. Circular. Crenshaw County Apiaries, Rutledge, Ala.

IMPROVED ITALIAN queens, 75c; from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Caldwell, Tex.

FOR SALE — 80 10 - frame hives, 95% Three-ply combs. Nice equipment. No disease now or ever. Chas. C. Allen, R. 4, Staunton, Va.

FORTY COLONIES of bees in one-story, ten-frame hives with metal covers, at $5.50 each. Will furnish certificate of inspection. K. A. Gallant, Jordan, N. Y.

PACKAGE BEES AND QUEENS. 3-band Italians, prompt service and satisfaction. Unt. queens, 65c each. Tested queens, $1.30 each. 3 lb. pkg. with queen, $3.65. John A. Norman, Ramer, Ala.

THREE - BANDED Italian queens, fine honey-gatherers and gentle to work with. Select untested, 80c each any number. A health certificate with every order. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, N. C.

FOR SALE—Because of my age I will sell not later than November 1st, 1100 ten-frame colonies of clean bees with plenty of equipment; extractor, truck, honey house, and good clover locations. If interested see H. T. Bickley, Deloit, Iowa, and write T. W. Burleson, Waxahachie, Texas.

MISCELLANEOUS WANTED

WANT 100 feet colored 16 mm film bee activities. Give price. Lenington, 506 S. Wabash Ave., Chicago.

WANTED FOR CASH—Old bee books, especially ABC and XYZ of Bee Culture, 1877. Also old envelopes advertising bee business before 1900. Irvin Van Devier, Medina, Ohio.

HELP WANTED

HELP WANTED—for work with bees in large bee business. Year around job. Care of Gleanings, Box 8, Medina, Ohio.

WANTED—Man with beekeeping experience for year-round work with deferment possible. Arthur J. Schultz, Ripon, Wis.

WANTED—Experienced man, married or single, in queen, package, and honey production. Year around work. Give full particulars when replying. Al Winn, Rt. 1, Petaluma, Calif.

TRAPPERS

TRAP FOX AND COYOTE on bare ground or deep snow. Learn modern methods and outwit the sly furbearers. Free illustrated circular. F. Q. Bunch, Welch, Minn.

MAGAZINES

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice

of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including a subscription to the paper 10/6. The Apis Club. L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s. 6d., International Money Order. Apply Editor, Indian Bee Journal, Jeolikote, Dist. Nainital, U. P., India.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building, Winnipeg, Canada.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription, $1.50, Sample copy fifteen cents.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $1.50. Hotel Cactus, San Angelo, Texas.

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SEPTEMBER HONEY REPORT

(Continued from page 620)

The South Atlantic States have a crop of 3,707,000 pounds less than last year's crop of 22,140,000 pounds. Florida with almost half of the area's production has a crop about the same as last year, but Georgia has about 2 million pounds less, and Virginia one million pounds less.

The North Central States west of the Mississsippi River have about a million pounds less than the crop of 41,616,000 pounds last year. All States of that area except Minnesota, Missouri and Kansas show decreases.

The heat and dryness that enveloped much of the South and the Far West following the late wet spring tended to shorten the period of bloom of the summer flora and to dry up late sources of nectar. As a result the crop in a majority of the States of these areas has not proven to be as large as was expected in July although larger in the important States of California, Arizona, Colorado, Texas and North Carolina. On the other hand, most States in the Northern belt had enough summer rain and some an excess. But comparatively few had just the proper balance of rain and sunshine for heavy honey production. Crops are better than were expected in July in most West North Central States and poorer in the East North Central and Middle Atlantic States.

Prospects on August 20 for the late flow appeared to be fair to good in most of the North and West but poor in the South. As the greater part of the fall flow in most States is left on the hives for winter supplies for the bees it is not a major factor in the removable surplus. However, as the late flow normally amounts to from 10 to 15 percent of the total crop, the final outcome for the entire season may vary somewhat from expectations prevailing on August 20.

MR. BEEKEEPER:

75 Years Is a Long Time

Our reputation for fair business dealings with beekeepers all over America is more than 75 years old.

And we'll be here when the emergency is over. But right **NOW** we need several million pounds of YOUR Honey.

Send us your offerings — one can or a carload.

Jewett & Sherman Company

Milwaukee 4, Wisconsin - Kansas City 7, Missouri - Cleveland 2, Ohio - Brooklyn, New York

Package Bees and Queens--Quality Bees and Service

Progeny-Test Three-Band Italians Daughters of Stock Bred for Resistance to A. F. B.

PRICES
Queens

1 to 50 ..... $ .65
51 and up ..... .60
No extra charges for air mailing and clipping

Garon Bee Co., Donaldsonville, La.

Telephone 8614 Telegrams, Western Union

BETTER BRED QUEENS
Three - banded Italians
Prepare for next year's crop, by requeening with our better bred stock. They have been tried by thousands and have proved satisfactory. Any quantity. 60c.
CALVERT APIARIES
Calvert, Alabama

CARNIOLANS CAUCASIANS
A few fine queens of the above races still left, gentle, prolific, fine workers, good winterers. Price while they last: Untested, 75c each; tested, $1.50 each. By Air Mail, 5c extra per queen.
ALBERT G. HANN
Glen Gardner, New Jersey

THANK YOU, FRIENDS
To our customers both small and large we extend our sincere thanks for making 1943 a successful year for us. Preparations for 1944 are under way. Let us hope that VICTORY will be realized during the coming year.
BESSONET BEE COMPANY, Donaldsonville, La.

Wanted Amber Extracted Honey
Send Samples and best price Frt. Paid to Cincinnati, O.
THE FRED. W. MUTH CO.

The Hubbard APIARIES
WRITE FOR FREE CATALOG
Quality Bee Supplies Factory Store Prices
Prompt Shipment from Stock
Satisfaction Guaranteed
THE HUBBARD APIARIES
Manufacturers of Bee Supplies
ONSTED, MICHIGAN

MOUNTAIN GRAY BEES

Sold out for all this year and until May 1st, 1944. We genuinely appreciate the business you have sent us this year and the confidence you still have in our ability to send you good bees.

BOLLING BEE CO.
Bolling, Ala.

FOR LAST MINUTE REQUEENING

Send to us. We rear queens late, special for fall use. Finest mated laying Italian queens, untested, 75c each; tested, $1.50.

WHITE PINE BEE FARMS
Rockton, Pa.

DOMESTICATED EARTHWORMS

Put earthworms to work. They rapidly convert all manures and organic waste into highly fertile topsoil for garden, nursery, orchard or farm. My complete, illustrated production manual, **"EARTHWORMS: Their Intensive Propagation and Use in Biological Soil Building,"** prepaid for $1.00, with 30 days return privilege. Order today, or write for valuable free information.—

Thos. J. Barrett, Earthmaster Farms,
Box A-10 Roscoe, Calif.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor. P. O. Box 20.
West Maitland New South Wales
Australia

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$1.00 a Year

Is the new rapidly growing bee journal. Established 1938. It is now one of the three leading beekeeping publications.
Single copy current issue, 10c.
Combined with Gleanings in Bee Culture, it makes the Perfect Pair. Both magazines, one year, $1.75.

THE BEEKEEPERS MAGAZINE
3110 Piper Rd. Rt. 5, Lansing, Mich.

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bais or prejudice. "The forum for the thoughtful" One year $1.00; two years, $1.50; sample copy, 3c stamp.
With Gleanings it provides a combination that covers the beekeeping field.

Both magazines for one year, $1.75

BEEKEEPERS ITEM
P. O. Box 687 San Antonio, Texas

BUY U. S. WAR BONDS AND STAMPS

NEW ENGLAND'S S. O. S.

This service of supply — established in 1906 by A. W. YATES, is located for motorists on Route U. S. 5, just two blocks north of Goodwin Park. As carload dealers in Root Beekeepers' Supplies and Hazel-Atlas Honey Jars, we offer a **twenty-four hour mail order** or motor transportation service to all sections of New England.

CEILING PRICES PAID FOR BEESWAX & HONEY

QUEENS!

THREE-BAND ITALIAN

Daughters of queens bred for Resistance

The remainder of the season will be devoted to supplying you with the best queens possible, from either of the above strains.

For 20 years I have pleased the most exacting customers, and I believe I can do as much for you.

Prices either strain

1 to 24	$.75
25 to 99	.70
100 to 499	.65

Clipped free upon request.

A. E. SHAW, Shannon, Miss.

Look for This Sign
QUALITY at LOW COST
When You Want

KELLEY—"The Bee Man"

QUEENS!

100 queens daily. Three-banded Italians. Reared on our bee farm and shipped daily from Paducah.

1 to 24	$ .75 each
25 to 99	.70 each
100 and up	.65 each

We will accept beeswax in trade at the highest ceiling prices.

The Walter T. Kelley Co., Paducah, Ky.

Manufacturers of Bee Supplies

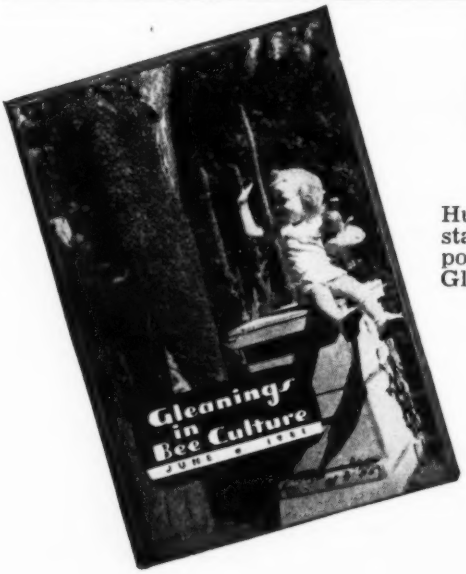
The SITUATION

During 1943, we have manufactured a normal quantity of Smokers, Veils, and Gloves. Due to the 38% limitation up to March, quarterly allocations of materials, and labor shortage, the production of Extractors has been limited. Melters and some other items are out for the duration.

For 1944, we will have a normal supply of Smokers, the most indispensable item. There will be some Extractors and other items, but the quantity is uncertain. At this time, the Labor situation in this area is very critical.

During the past season, we have had an adequate supply of wooden goods, foundation, containers, and most minor items. We are now arranging the same for 1944.

A. G. Woodman Co., Grand Rapids, Mich.



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Hundreds of new beekeepers have started this year. Their success is important. **"Talks to Beekeepers"** in Gleanings in Bee Culture will help them.

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2 Two-year Subscriptions
(At the Regular Rates)

And we will enter your subscription FREE for one year.

Mail to Circulation Manager
GLEANINGS IN BEE CULTURE
Medina, Ohio

SELL US YOUR HONEY NOW AND SAFEGUARD YOUR FUTURE SALES

• Here is an opportunity to establish permanent connections with one of America's largest honey merchants. Sell us your honey now, all of it, in carload lots. (Smaller amounts accepted from nearby points.) We pay top ceiling prices. We also want your beeswax. For this we pay $.41½ for clean, pure, yellow wax. All prices effective at shipping points. Send your samples at once. Cans returned in accordance with OPA order No. 275, if desired.

THE JOHN G. PATON COMPANY, INC.
630 Fifth Avenue, New York, N. Y.

New York Beekeepers

The field is full of honey buyers. It's definitely a seller's market and a chance to get out of debt and build for the future. Do some serious thinking now. Tomorrow may be too late. Buyers will be critical then. Seek a permanent outlet which you yourself control. See what a Cooperative can do to build for post war market. It's equipped to do a big job. We need millions of pounds of honey to do it. The bonded warehouse assures a cash advance on delivery. It's your opportunity. The time is right. Ask for further information.

Finger Lakes Honey Producers Cooperative, Inc.

Groton, New York

Queens - ITALIAN - Queens

Daughters of Resistant Stock

QUEENS

Caucasians mated to Italian drones

1 to 24, ... $ .90
25 to 99, ... .85
100 or more, ... .80

Over 25 years a shipper.

FREE circular. 10% down books your order for package bees for 1944.

BLUE BONNET APIARIES
R. 1, Box 70, MERCEDES, TEX.

HONEY LABELS
Beautiful designs
THE A. I. ROOT COMPANY
Medina, Ohio

TOO LATE TO CLASSIFY

FOR SALE in Ontario 600 colonies of bees, good equipment, honey house, barn, comfortable house, also sideline with steady income, for cash. Good reason for selling. Inspector's certificate will be furnished. Box 474, Gleanings, Medina, Ohio.

FOR GOODNESS SAKE, smoke your own hams and bacon. Directions for pickling and smoking, $1.00. Very old New England recipe. Cecil Shepard, Rochester. N. H.

100 bee hives, regular size; 400 comb on full Root 3-ply foundation and wired; one 2-frame extractor, one 4-frame extractor; 300 special screens; extra bottoms, extra covers. F. W. Morgan, Camargo, Ill.

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HoneyProducers:

FROM PRESENT INDICATIONS there will be a big demand for PACKAGE BEES next year.

Already we have had several requesting that their orders be booked for 1944. At this time we have not arranged prices, but will try to have them released by Dec. 1st. In the meantime we will be glad to file your order subject to your approval when the price is released.

We are working to have additional colonies and queen-rearing equipment as well as supplies to handle the much increased volume of business we anticipate.

Delivering your order on time and of quality PACKAGE BEES is our business. You can help us by giving us an early estimate of your needs and the date desired. You are under no obligations in doing this and it will be of great value in making arrangements for spring delivery.

"THEY SATISFY"

Do we have your name and present address?

Rossman & Long

Box 133 **Moultrie, Ga.**

???? 1944 ????

We now have all the orders for package bees we dare book for 1944 delivery. We hate to turn down old customers, however, we are unable to supply all your needs.

THANKS.

WEAVER APIARIES

Navasota, - Texas

BUY U. S. WAR BONDS AND STAMPS

ASKED AND ANSWERED

(Continued from page 615)

nine instead of ten frames in a reggular 10-frame brood chamber. We have tried this but we do not like the plan because there is likely to be bits of burr - comb built between the frames and combs which tends to kill bees during the manipulation of hives and interferes generally with handling the combs satisfactorily. In our opinion, it is preferable to use ten frames in a 10-frame brood chamber. It is all right to use nine frames in a 10-frame super above an excluder intended for the production of extracted honey. This wider spacing permits the bees to project the cells of the combs, which in turn facilitates uncapping the combs and may tend to increase wax production.

Marking Queen Bees

Question.—Could you please inform me where it would be possible to buy the special paint necessary to mark queen bees?—S. M. Deschenes, Quebec.

Answer. — Regarding p a i n t for marking queen bees, our Mr. Mel Pritchard, who passed on recently, experimented with various kinds of paint. He said that ordinary lacquer, red or yellow, is suitable because queens marked with these colors are easily found. A very small amount of lacquer applied with a small camel hair brush, or a sharpened toothpick, on the top of the thorax, on the bare spot sometimes called the shield, is all that is necessary. If paint is spread over the queen it is almost sure to be deterimental, in fact, fatal. Care should be exercised in order to apply the paint properly.

How to Exterminate Bees

Question.—I want to know how to exterminate some bees for a neighbor and not destroy or taint what honey may be in the old hives.—H. D. Farson, Ohio.

Answer.—You can destroy bees in a hive by using Cyanogas. One tablespoonful of this powder, placed on a cardboard paper at the entrance of the hive, then shoving the paper containing the chemical into the entrance of the hive, will destroy a colony of bees in less than half a minute. The gas, being lighter than air, travels up and destroys bees instantly. This chemical may be obtained at any up-to-date drug store. Directions should be read carefully and the chemical used with extreme care. Do not inhale the gas fumes. Keep a safe distance from the hive after applying the Cyanogas.

THE SWEET CLOVER WEEVIL

(Continued from page 587)

begun to appear. In other words, there are beetles the year around and the only apparent change is that as the beetles of the old generation disappear the young ones of the new generation emerge to take their places.

Control

While plowing under of the infested sweet clover fields as soon as the hay is cut, at least before the 3rd week of July, is the only recommendation as yet made for combatting the pest, it is apparent that the method has certain limitations. The method, while applicable to fields, would present difficulties for roadsides, stony land and otherwise inaccessible places for the plow. The method, even with the limitations mentioned, shows definite promise as a control measure. Plowing of infested fields at this time is believed to destroy both the larvae and pupae of the the sweet clover weevil present in the soil during summer.

HONEY

(Continued from page 621)

no such reports have been called for.

9. Q. What is the general attitude of the honey industry toward this Order?

A. The honey industry as a whole regards this Order as one of the best regulations put out by the Government, especially for its effect on postwar marketing, and on the retaining of a fair share of the honey crop for home use. Since its issuance by the Department no appeals have been received from the members of the industry.

10. Q. How much honey is affected by the provisions of this Order?

A. In recent years, domestic honey production has averaged around 190 million pounds a year. Perhaps half of the total is sold by beekeepers locally or at nearby towns, in too small lots to be affected by the Order. This leaves slightly less than 100 million pounds a year of domestic honey that are affected by this regulation. During the past year or two imported honey, which formerly arrived in very small quantities, has become a more important factor in the market, and substantial quantities can be expected as long as sugar restrictions continue in effect.—From the War Food Administration, Food Distribution Administration, Washington 25, D. C.

Pettit's

Bees and Queens

We are able to give prompt mailing of best young three-banded queens through September only.

Eighty cents each, or $1.00 Canadian money sent to M. Pettit, Georgetown, Ont., pays all charges. Write for quantity prices.

Orders for hundreds of packages already booked. Subject to standard prices to be quoted before New Years.

We shipped 50% more bees in 43 than in 42. We refused more orders than we filled. Why not book orders before all best dates are taken?

Morley Pettit

Tifton, Georgia, U. S. A.

SORRY

We are out of queens for the rest of the season. We appreciate your business very much and hope to be able to supply your needs next season.

BUY MORE WAR BONDS

The Stover Apiaries

Mayhew, Miss.

ARE YOU KEEPING UP . . .

with the latest developments in your field? Here's a group of magazines that specialize in a particular subject! You'll be interested in at least one of these magazines..and you have the assurance that the articles are written by people who know. Send your subscription today!

Bee Magazines
- Gleanings in Bee Culture, $1. per year
- Beekeepers' Item, $1.
- American Bee Journal, $1.
- Beekeepers Magazine, $1.

Farming
- The Country Book, quarterly, $1.
- American Farm Youth, 75c
- Fletcher's Farming, 50c

Goats
- American Dairy Goat News, $1.
- Goat World, $2.

Livestock
- The Cattleman, $1.
- American Cattle Producer, $1.
- Florida Cattleman, $1.
- National Live Stock Producer, 50c
- Texas Live Stock Journal, $1.
- Eastern Breeder, $2. (8 months $1.)
- NRA Round-up, (rodeos) 50c
- Pacific Stockman, $1.
- The Sheepman, $1.
- New Mexico Stockman, $1.
- Dairyman's Journal, 35c
- Hoofs & Horns (rodeos, west) $1.50
- National (Saddle) Horseman, $5.

Pigeons
- American Pigeon Journal, Squabfancy, $1.50
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WORKING FOR WAX

(Continued from page 581)

began to leave the hives in October, I put back the wired frames with full sheets of foundation, which put an end to the desertions almost immediately, but, as my contribution to "Let the Bees Wax the Way to Victory." campaign, I still continue to put two empty frames in the brood chamber. Number 2 from either side, and they are always filled out at once. They are so little trouble to cut out, as I found it unnecessary to either leave rows of cells or to put in starters. I have to be careful, however, to visit the hives regularly to cut out these combs as they are invariably drone cells, and if they are neglected, one is apt to find too many drones to be profitable. Since November 1, up to date, April 26, I have sold 218 pounds of wax.

With the American system of piling up supers, I can understand you would not be able to put empty frames in the brood chamber. Here, we do not put on more than one hive body above the brood chamber, or two at the most. If we left the honey on the hives for any length of time, the ants would attack the supers above, break the seal, and then the bees would eat up all the honey. One American beekeeper I knew had to change his system of beekeeping completely in Cuba. When he went to take off his supers he found them empty, and in some cases the ants had chased out the bees. Cuba is the beekeeper's heaven, but one has to learn how to adapt oneself to local conditions. Those of your country would be costly to us here.

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Arlington Heights, Illinois

The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas
EAST CENTRAL AND NORTH CENTRAL STATES: (Period August. 26-Sept. 10)

Michigan. Extracting of the white honey is well under way in Michigan. Quality is excellent but yield is below normal and reported not over 50-60 pounds per colony. Rain and cool windy weather prevented bees from working much on the aster and other fall flowers. Prospects from the fall honey flow are disappointing, although a fair amount of honey was obtained from fall flowers in the Lower Peninsula until the first week in September. Bees are in better condition than last year. Most colonies will go into winter quarters with more stores and a stronger population of young bees. Demand for honey is very good, especially the consumer trade, and most supplies of honey are moving locally at ceiling levels. Sales f.o.b. shipping point, per lb.—extracted Clover in carlots 12c, small pails 17-19 ½c; in single 60's 15c. Beeswax 43½c in trade f.o.b. to beekeepers.

Wisconsin. Considerable cold, r a i n y weather and wind with near freezing temperatures during the latter part of the period has cut short the fall honey flow, in some localities being almost a complete failure. Extracting is progressing rapidly. While some beekeepers report yields of 100 to 135 pounds surplus the crop as a whole was much lighter than this. Indications are the crop will be heavier than last year, however. Quality of honey is generally a little better this season than last. Bees are in fair condition. Broodrearing is tapering off and some beekeepers report queens have stopped laying. Demand for honey is very good and moving almost as fast as it is being extracted into local trade channels at ceiling levels. Little comb honey is available. Sales f.o.b. shipping point, extracted White Clover, case to ton lots 12c, in single 60s 15c, in small pails 17½c.

Minnesota. Cold rainy weather during much of this period cut the fall flow short. Extracting is practically completed and commercial beekeepers report their yields range from 60 - 80 pounds per colony. Smaller beekeepers' crops are much less. The late honey crop is somewhat dark but with a mild flavor and thin body. Fall bloom of honey plants especially smartweed and Spanish needle was the best in several years but produced little nectar. Bees worked well on these nectar sources and Hubam clover during the few days the weather permitted. Colonies are expected to start the winter in much better condition this year with fairly good stores. Queenless colonies have been reported by some beekeepers. Demand for honey is very good, with most supplies packed in small containers. Sales f.o.b. shipping point, extracted White Clover, in single 60c 15c, in small pails 19c.

Ohio. Cool weather and rain in most sections of the state have curtailed bee activity. The clover crop has been mostly extracted and so far has proved very disappointing with the yield for the State reported at around 30 pounds per colony. Fall honey plants especially Spanish needle, asters and goldenrod are in good condition and beekeepers are hoping for a much better flow than produced by clover, although little honey has been gathered from these sources to date. Bees are in fairly good condition and beemen hope that the fall flow will build up winter stores. Demand for honey is very good and most is being sold locally almost as fast as it can be extracted. Large lot buyers are still trying to buy on contract at ceiling levels. Sales f.o.b. shipping point, extracted, Clover, case to ton lots 12c, in small pails and 1-lb. glass pars 20c. Comb, case lots Clover, average quality $5.00; Buckwheat, No. 1, few sales $6.50.

Indiana. Cool weather in northern Indiana has retarded bee activity. The honey crop is rather spotted with some beekeepers reporting only 25 percent of normal while nearby beemen report yields near normal. Bees secured a light flow of nectar from heartsease but the flow from aster and goldenrod has not yet started. Bees are working some sweetclover. Honey plants appear to be in fair condition but prospects for a fall flow are doubtful. Bees appear to be in fairly good condition, but are cutting down broodrearing. Brood nests are still sizable and some of the gathered nectar is being stored in brood chambers. Demand for honey is very good and exceeds supply. Much is being sold as fast as it can be extracted. Practically all sales are made to the local trade at ceiling levels. Sales f.o.b. shipping point extracted Clover, per lb., small pails mostly around 18c; glass jars 17½-22½c, with some sales direct to consumers higher.

SUMMARY

Reports to the Bureau of Agricultural Economics as of August 20 indicate the honey crop for 1943 will be slightly over 191 million pounds. Allowance for the expected late summer and fall honey flow is included in this estimate. Although the present indicated crop is about eight percent larger than the poor crop of 1942, it is about thirteen percent less than the record large crop in 1941 when the number of colonies of bees was about nine percent less than this year. The number of colonies this year is estimated at 4,901,000, or about the same as last year. Efforts to increase the number of producing units failed due to the poor crop last year which resulted in heavy winter losses. The wet late spring this year was unfavorable for broodrearing and prevented colonies from building up to normal strength before the main nectar flows. Of this year's estimated total honey crop about 76 million pounds

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or 40 percent will be produced in the North Central States, about 60 million pounds or 31 percent in the far West, 37 million pounds or 20 percent in the South, and about 17½ million pounds or 9 percent in the North Atlantic States. Production is larger than last year in the North Atlantic, East North Central, South Central and far Western States, but smaller in the West North Central and South Atlantic.

In most of the areas which suffered from drought during July and August sufficient rain fell during early September to relieve the extreme drought conditions, although in some areas the rains came too late to benefit fall plants greatly. The main summer flows are practically over in all sections. Cool weather during the last week in August cut short the buckwheat flow in Pennsylvania and New York. Some beekeepers in the buckwheat areas report yields close to normal, but the buckwheat crop as a whole will be short. Little surplus is now being stored in any section. Cool, damp weather in many sections during early September has retarded bee activity. In the Northeastern States goldenrod and heartsease are beginning to produce. In some of these sections asters will soon be blooming. In nearly all parts of the country colonies are in strong condition with good populations and ample brood. In most sections stores are sufficient, but in a few areas, mostly in the South, considerable additional fall honey will have to be gathered if winter feeding is to be averted.

Extracting is under way in all sections. Labor shortages continue to be a retarding factor especially among the larger commercial beekeepers. Demand for honey continues in excess of available supplies. Packers are experiencing extreme difficulty in obtaining sufficient honey to carry them through a normal season's operations. An increasingly large proportion of the crop is being sold locally by beekeepers to consumers or retailers. In general ceiling prices prevail for all honey without much regard to flavor, color or grade, although in some cases extremely dark or low grade honey is being discounted slightly. Moderate quantities of beeswax continue to move to market in most sections at ceiling prices.

Kentucky. Recent rains in northern Kentucky have greatly improved the prospects for a fall honey flow. Goldenrod and heartsease are providing some nectar. Asters are plentiful and will provide an additional source of honey if weather conditions permit bees to work.

Monthly Report of Honey Producers

Early in September we sent the following questions to honey producers: 1. What is the final average yield per colony to date this season in your locality of (a) Extracted honey? (b) comb honey? Give answer in pounds. 2. How does this compare with the average yield for your locality? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality, during the past month, for (a) extracted honey per pound? (b) comb honey, fancy, and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy, and No. 1, per case? 5. What is the retail price to consumers in your locality for (a) extracted honey in 5-lb. pails, or other packages in terms of 5-lb. pails? (b) comb honey, fancy, and No. 1, per case? 6. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair, or rapid. 7. What is the condition of the colonies for winter in your locality compared with normal, considering the number and age of bees and the supply of stores? Give answer in percent. The answers received are tabulated as follows:

		1. Aver. yield per colony		2. Comparison.	3. Carload lots		4. To Grocers.		5. To consumers.		6.	7.
Sept. Date.	State Name	Ex.	Comb.		Ex.	Comb.	Ex.	Cb.	Ex.	Cb.	Movement	Cond. of colo.
13	B. C. (A. W. Finlay)	48		96						.40	Rapid	100
13	S-Calif. (L. L. Andrews)	75	0	150						.35	Rapid	100
11	SE-Colo. (Otis E. Adcock)	80								1.30*	Rapid	100
8	E-Conn. (Allen Latham)	60		100				6.00		.33	Rapid	100
10	S-Fla. (C. C. Cook)	50		100							Rapid	100
13	C-Fla. (Harry Hewitt)	125		200							Rapid	100
17	NC-Ills. (A. L. Kildow)	15	0								Rapid	100
7	S-Ills. (Carl E. Killion)			5		6.00		6.00		.33	Rapid	80
8	NW-Ind. (E. S. Miller)	100	50	100				6.00		.30	Rapid	100
20	N-Mich. (Ira D. Bartlett)	60	0	60							Rapid	75
11	S-Mich. (Floyd Markham)	100		80				6.00		.35	Rapid	100
11	C-Mich. (E. D. Townsend)	70		100							Rapid	100
9	SW-Minn. (L. A. Syverud)	110		85							Fair	
11	W-Minn. (B. L. Morehouse)	100		90							Rapid	80
11	S-Minn. (J. F. Garner)	70	0	70							Rapid	100
11	W-Nev. (Geo. G. Schwies)	30	15	30		4.50		4.50		.25	Fair	60
17	W-N. M. (C. A. Baltzley)	135	68	110						.40	Fair	100
9	NW-N. Y. (Geo. B. Howe)	75	0	75		5.50					Fair	100
7	C-N. Y. (F. W. Lesser)	60		60							Rapid	125
11	SE-N. C. (W. J. Martin)	150		90							Rapid	100
9	E-N. D. (M. W. Cousineau)	75	0	50							Good	
8	NC-Okla. (C. F. Stiles)	20	0	80							Rapid	70
11	C-Pa. (Harry Beaver)	30		80							Rapid	90
8	SE-Pa. (D. C. Gilham)	10	5	15				5.40		.30	Fair	70
7	C-Tenn. (J. M. Buchanan)	75	40	110							Fair	100
10	C-Texas (T. A. Bowden)	25		50							Fair	100
10	S-Texas (C. G. Mayes)	75	0								Rapid	80
11	S-Texas (H. B. Parks)	50		98							Rapid	100
11	W-Utah (Wm. Moran)	45		75							Rapid	90
10	S-Va. (T. C. Asher)	5		10						.30	Fair	90
18	SE-Wisc. (N.E. France)	100	0	100							Rapid	100

* Bulk comb in 5-lb. pails

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Reshipping case of 12—2½-lb.	.67	11 lb.
Reshipping case of 6—5-lb.	.42	10 lb.
Reshipping case of 4—10-lb.	.45	13 lb.

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16 oz. Economy Jars, carton 24 each,	$0.70
32 oz. Economy Jars, carton 12 each,	.42
5 lb. Economy Jars, 12 cartons	5.00
24 cartons	9.95
60 lb. Square tin cans, carton of 16	5.40

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